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TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	May 12	EXTEND option available in structure searching
NEWS 4	May 12	Polymer links for the POLYLINK command completed in REGISTRY
NEWS 5	May 27	New UPM (Update Code Maximum) field for more efficient patent SDIs in CAplus
NEWS 6	May 27	CAplus super roles and document types searchable in REGISTRY
NEWS 7	Jun 28	Additional enzyme-catalyzed reactions added to CASREACT
NEWS 8	Jun 28	ANTE, AQUALINE, BIOENG, CIVILENG, ENVIROENG, MECHENG, and WATER from CSA now available on STN(R)
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NEWS 10	Jul 30	BEILSTEIN on STN workshop to be held August 24 in conjunction with the 228th ACS National Meeting
NEWS 11	AUG 02	IFIPAT/IFIUDB/IFICDB reloaded with new search and display fields
NEWS 12	AUG 02	CAplus and CA patent records enhanced with European and Japan Patent Office Classifications
NEWS 13	AUG 02	STN User Update to be held August 22 in conjunction with the 228th ACS National Meeting
NEWS 14	AUG 02	The Analysis Edition of STN Express with Discover! (Version 7.01 for Windows) now available
NEWS 15	AUG 04	Pricing for the Save Answers for SciFinder Wizard within STN Express with Discover! will change September 1, 2004

NEWS EXPRESS	JULY 30 CURRENT WINDOWS VERSION IS V7.01, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 APRIL 2004
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

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* * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 16:43:16 ON 08 AUG 2004

10727225

=> registry
REGISTRY IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=>
Uploading
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Do you want to switch to the Registry File?
Choice (Y/n):
Switching to the Registry File...
Some commands only work in certain files. For example, the EXPAND
command can only be used to look at the index in a file which has an
index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of
commands which can be used in this file.

=> FILE REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 16:43:35 ON 08 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
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STRUCTURE FILE UPDATES: 7 AUG 2004 HIGHEST RN 723734-66-5
DICTIONARY FILE UPDATES: 7 AUG 2004 HIGHEST RN 723734-66-5

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

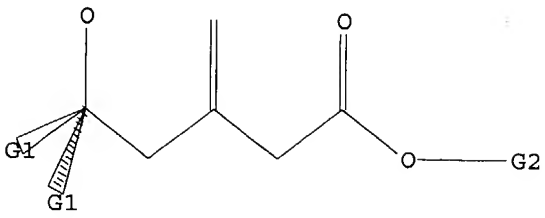
Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
Uploading C:\STNEXP4\QUERIES\10727225-1.str

L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR

10727225



G1 C,H,Cb,Cy,Ak

G2 C,H,Si,Cb,Cy

Structure attributes must be viewed using STN Express query preparation.

```
=> s l1 full
FULL SEARCH INITIATED 16:43:55 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 466207 TO ITERATE

 83.6% PROCESSED  389571 ITERATIONS                          540 ANSWERS

 85.8% PROCESSED  400000 ITERATIONS                          540 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.25

FULL FILE PROJECTIONS:  ONLINE  **INCOMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:       466207 TO   466207
PROJECTED ANSWERS:             554 TO      704

L2          540 SEA SSS FUL L1

=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   155.84     156.05

FILE 'REGISTRY' ENTERED AT 16:44:42 ON 08 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    7 AUG 2004  HIGHEST RN 723734-66-5
DICTIONARY FILE UPDATES:   7 AUG 2004  HIGHEST RN 723734-66-5

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html
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=> s l2
SAMPLE SEARCH INITIATED 16:44:47 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -  23437 TO ITERATE

  4.3% PROCESSED    1000 ITERATIONS                                 2 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **INCOMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:       459586 TO   477894
PROJECTED ANSWERS:             527 TO     1347

L3             2 SEA SSS SAM L1

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.42     156.47

FILE 'CAPLUS' ENTERED AT 16:45:07 ON 08 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 8 Aug 2004  VOL 141 ISS 7
FILE LAST UPDATED: 6 Aug 2004  (20040806/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> s l2 full
L4           332 L2

=> s l4 and HPLC
          151186 HPLC
L5             6 L4 AND HPLC

=> s L4 and resolution
           87034 RESOLUTION
L6             9 L4 AND RESOLUTION

=> d 1-9 bib abs l6

L6   ANSWER 1 OF 9  CAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:509977  CAPLUS
DN   141:54196
TI   Procedure for the production optically active dihydropyrones from
     optically active 5-hydroxy-3-ketoesters
IN   Sauter, Markus; Schroeder, Juergen; Jaeger, Burkhard
```

10727225

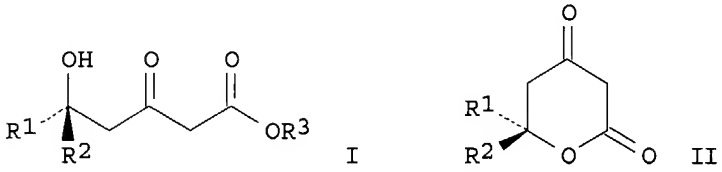
PA Boehringer Ingelheim Pharma GmbH & Co. KG, Germany
SO Ger. Offen., 16 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10257761	A1	20040624	DE 2002-10257761	20021210
US 2004133032	A1	20040708	US 2003-727225	20031203
WO 2004052831	A2	20040624	WO 2003-EP13851	20031205

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI DE 2002-10257761 A 20021210
GI



AB A procedure for the production optically active 5-hydroxy-3-ketoesters [I; R1, R2 = (cyclo)alkyl, (un)substituted aryl, (alkenyl)aryl; R3 = (halo)alkyl, arylalkylene, trihydrocarbylsilyl] are prepared and resolved by HPLC using enantiomer-separation columns and the I enantiomers subjected to lactonization to give optically active dihydropyrones (II; e.g., tipranavir). A process flow diagram is presented.

L6 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:473393 CAPLUS
DN 141:38360
TI A process for the synthesis of 3-hydroxy-3-(2-phenylethyl)hexanoic acid, useful as an intermediate for antiviral drugs
IN Wilken, Joerg; Nerenz, Frank; Kanschik-Conradsen, Andreas
PA Honeywell International, Inc., USA
SO U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004110957	A1	20040610	US 2003-660837	20030912
WO 2004052883	A2	20040624	WO 2003-US40067	20031204

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,

PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-431112P P 20021205
US 2003-660837 A 20030912

AB The invention relates to a process of preparation of 3-hydroxy-3-(2-phenylethyl)hexanoic acid (no yield data), useful as an intermediate for antiviral drugs. The process includes (a) reaction of 1-phenyl-hexan-3-one with Et bromoacetate under Reformatsky conditions and (b) separation of (R)-3-hydroxy-3-(2-phenylethyl)hexanoic acid by saponification and reverse resolution of the racemate of the step (a). The invention comprises a reverse resolution process for separating an enantiomer from a mixture of enantiomers. The advantages of the invention include a process for producing racemic 3-hydroxy-3-(2-phenylethyl)hexanoic acid at relatively rapid reaction rate and high yield, and improved process for resolving a racemate.

L6 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:633631 CAPLUS
DN 139:179885
TI Process for producing (R)-3-hydroxy-3-(2-phenylethyl)hexanoic acid and intermediates therefor
IN Tanaka, Masahide; Matsui, Kozo; Katsura, Tadashi; Iwasaki, Mitsuhiro; Maeda, Hiroshi; Itaya, Nobushige
PA Sumika Fine Chemicals Co., Ltd., Japan
SO PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003066564	A1	20030814	WO 2002-JP11348	20021031
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003176507	A1	20030918	US 2002-320325	20021216
US 6683207	B2	20040127		
US 2004138496	A1	20040715	US 2003-727398	20031204
PRAI JP 2002-30724	A	20020207		
JP 2002-41480	A	20020219		
JP 2002-105772	A	20020408		
JP 2002-242741	A	20020822		
US 2002-320325	A3	20021216		

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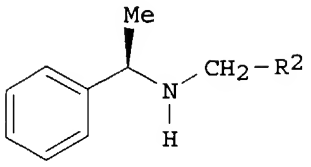


I

AB This document discloses a process for producing (R)-3-hydroxy-3-(2-phenylethyl)hexanoic acid characterized in that racemic 3-hydroxy-3-(2-phenylethyl)hexanoic acid is optically resolved by using an optically active amine represented by the general formula I [R2 represents 3,4-dimethoxyphenyl or 2-chlorophenyl]. (R)-3-Hydroxy-3-(2-phenylethyl)hexanoic acid, useful as an intermediate for an anti-HIV drug, can be efficiently produced with high optical purity and in a relatively high total yield.

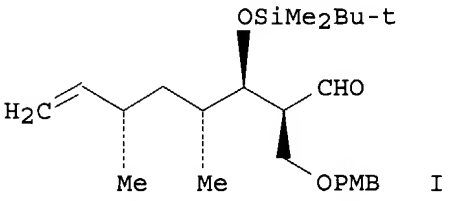
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:948073 CAPLUS
DN 138:368633
TI Chemoenzymatic synthesis of optically active β,δ-dihydroxy esters
AU Wolberg, Michael
CS Germany
SO Berichte des Forschungszentrums Juelich (2002), Juel-3988, i-xv,1-138
CODEN: FJBEE5; ISSN: 0944-2952
DT Report
LA German
AB A new access to optically active β,δ-dihydroxy esters and δ-hydroxy-β-keto esters is presented. These compds. are valuable intermediates for the synthesis of important natural products and pharmaceuticals, e.g. HMG-CoA reductase inhibitors of the mevinic acid type. The synthesis strategy is based on an unprecedented highly regio- and enantioselective biocatalytic reduction of achiral β,δ-diketo esters. In a screening, two enantio-complementary biocatalysts were found to be particularly suitable for this purpose. Thus, the β,δ-diketo ester tert-Bu 6-chloro-3,5-dioxohexanoate was reduced by NADP(H)-dependent alc. dehydrogenase of Lactobacillus brevis to afford enantiomerically pure δ-hydroxy-β-keto ester tert-Bu (S)-6-chloro-5-hydroxy-3-oxohexanoate in a 72-84% isolated yield (>99.5% ee). The enzyme is readily available in the form of a crude cell extract from a recombinant E. coli strain (recLBADH). A scale-up of the one-step substrate synthesis (140 g scale) and of the enzymic reduction (70 g scale, substrate-coupled NADPH-regeneration) was established. The enantiomeric δ-hydroxy-β-keto ester tert-Bu (R)-6-chloro-5-hydroxy-3-oxohexanoate was obtained by reduction of tert-Bu 6-chloro-3,5-dioxohexanoate with Baker's yeast (Saccharomyces cerevisiae). A detailed investigation of the reaction parameters of this whole-cell transformation led to the application of a biphasic system by which the enantiomeric excess could be raised from 48% ee to 94% ee (50% isolated yield). The β-keto group of both enantiomers thus obtained was reduced by syn- and anti-selective borohydride redns. Combination of the reduction methods afforded all four stereoisomers of the crystalline β,δ-dihydroxy ester tert-Bu 6-chloro-3,5-dihydroxyhexanoate (>99% ee and dr > 200:1 each, 52-70% isolated yield). Alternatively, the syn-(3R,5S)-isomer of this known building block was obtained in one step and with high stereoisomeric purity by reduction of tert-Bu 6-chloro-3,5-dioxohexanoate with whole cells of Lactobacillus kefir. An iodide and an epoxide suitable for C-C-bond formation at C-6 were derived from tert-Bu syn-(3R,5S)-6-chloro-3,5-

dihydroxyhexanoate. RecLBADH accepts a variety of β,δ-diketo esters as was determined in a photometric assay. The β,δ-diketo esters tert-Bu 3,5-dioxohexanoate and tert-Bu 3,5-dioxoheptanoate were reduced on a 1-10 mmol scale to afford the corresponding (R)-δ-hydroxy-β-keto esters with 99.4% ee and 98.1% ee, resp. (61-77% isolated yield). The reduction of the branched β,δ-diketo ester tert-Bu rac-4-methyl-3,5-dioxohexanoate proceeds via a dynamic kinetic resolution which resulted in a 66% isolated yield of the corresponding syn-(4S,5R)-δ-hydroxy-β-keto ester (99.2% ee, dr = 35:1). To underline the applicability of the virtually enantiopure enzymic products, they were used as starting materials for several new natural product syntheses. Furthermore, a convenient process for the large-scale separation of noncrystg. diastereomeric syn- and anti-1,3-diols was developed. The crucial step of this new method is a diastereomer-differentiating hydrolysis of the resp. acetonides.

RE.CNT 293 THERE ARE 293 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:414664 CAPLUS
DN 137:201173
TI Toward a total synthesis of okilactomycin. 1. A direct, enantiocontrolled route to the western sector
AU Paquette, Leo A.; Boulet, Serge L.
CS Evans Chemical Laboratories, The Ohio State University, Columbus, OH, 43210, USA
SO Synthesis (2002), (7), 888-894
CODEN: SYNTBF; ISSN: 0039-7881
PB Georg Thieme Verlag
DT Journal
LA English
OS CASREACT 137:201173
GI



I

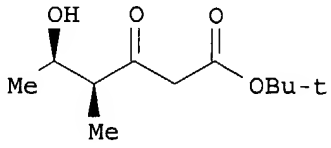
AB A synthesis of the western half, I, of the macrocyclic ring framework of the antitumor antibiotic okilactomycin is described. The strategy employed rests on an efficient synthesis of meso-2,4-dimethylglutaric anhydride and ensuing resolution via reaction with (S)-(-)-α-methylbenzylamine, diborane reduction, and selective crystallization Following acid-catalyzed cyclization to (2S,4R)2,4-dimethyl-δ-valerolactone, an acyclic stereocontrol strategy was adopted to achieve chain lengthening with appropriate incorporation of functionality. The sensitive aldehyde I was further homologated to a β-keto ester in a model reaction sequence performed to simulate its ultimate projected coupling in the total synthesis.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:362038 CAPLUS
DN 135:122320

10727225

TI Enzymatic reduction of hydrophobic β,δ-diketo esters
AU Wolberg, Michael; Ji, Aiguo; Hummel, Werner; Muller, Michael
CS Institut fur Biotechnologie 2, Forschungszentrum Julich GmbH, Julich, 52425, Germany
SO Synthesis (2001), (6), 937-942
CODEN: SYNTBF; ISSN: 0039-7881
PB Georg Thieme Verlag
DT Journal
LA English
OS CASREACT 135:122320
GI



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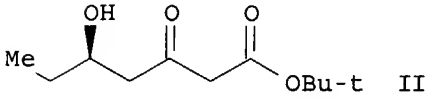
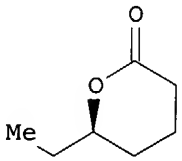


II



III

AB The regio- and enantioselective reduction of two hydrophobic β,δ-diketo esters is presented. Enzymic reduction of racemic tert-Bu 4-methyl-3,5-dioxohexanoate with alc. dehydrogenase from Lactobacillus brevis (recLBADH) gave δ-hydroxy-β-keto ester I under dynamic kinetic resolution conditions (99.2% ee, syn:anti=97:3, 66% isolated yield). The highly lipophilic tert-butyl-3,5-dioxoheptanoate was reduced with the same sense of enantio- and regioselectivity by recLBADH. A biphasic system was applied in this case. The product, δ-hydroxy-β-keto ester II (98.5% ee, 66% isolated yield), was converted into (R)-6-ethyl-5,6-dihydropyran-2-one (III), which is a naturally occurring fragrance.
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:8079 CAPLUS
DN 134:295535
TI Dynamic kinetic **resolution** of tert-butyl 4-methyl-3,5-dioxohexanoate through enzymatic reduction
AU Ji, Aiguo; Wolberg, Michael; Wandrey, Christian; Muller, Michael; Hummel, Werner
CS Forschungszentrum Julich GmbH, Institut fur Biotechnologie 2, Julich, 52425, Germany
SO Chemical Communications (Cambridge) (2001), (1), 57-58
CODEN: CHCOFS; ISSN: 1359-7345
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 134:295535
AB Tert.-Bu 4-methyl-3,5-dioxohexanoate was resolved by reduction with alc. dehydrogenase from Lactobacillus brevis to give (4S,5R)-HOCHMeCHMeCOCH2CO2CMe3 (I) in 99.2% ee. I was converted to (5R,6R)-5,6-dimethyl-5,6-dihydro-2-pyranone, confirming its stereochem. assignment.

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RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:248690 CAPLUS
DN 133:4825
TI Enantioselective synthesis of pyranofuranone moieties of manoalide and cacospongionolide B by enzymatic and chemical approach
AU De Rosa, Margherita; Soriente, Annunziata; Sodano, Guido; Scettri, Arrigo
CS Dipartimento di Chimica, Universita di Salerno, Salerno, 84081, Italy
SO Tetrahedron (2000), 56(14), 2095-2102
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 133:4825
AB Two synthetic sequences leading to the pyranofuranone moieties of Manoalide and Cacospongionolide B in enantiomerically enriched forms are reported. The key steps involve either an enantioselective aldol condensation or an enzymic resolution
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:520518 CAPLUS
DN 122:263688
TI Optically active β,δ-dihydroxyheptanoates preparation from γ-acetylene-β-ketocarboxylate
IN Kusumoto, Tetsuo; Mohamado, Hafuyuuzu Ansari; Hyama, Tamejiro
PA Sagami Chem Res, Japan; Nissan Chemical Ind Ltd
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07051089	A2	19950228	JP 1993-199472	19930811
PRAI	JP 1993-199472		19930811		

OS MARPAT 122:263688
AB Optically active β,δ-dihydroxyheptanoates R1C.tplbond.CCH(OZ1)CH2CH(OZ2)CH2COOR3 (R1= H or triple bond protecting group; R2= H or C1-20 alkyl; R3= H or C1-8 alkyl; Z1 and Z2 are protecting groups for OH) are prepared from γ-acetylene-β-ketocarboxylate R1C.tplbond.CC(O)CH2COOR2 (R1 is same as above; R2= H or C1-20 alkyl) by enantiomeric reduction with yeast, reaction with acetate ester, and selective reduction Optically active β,δ-dihydroxyheptanoates are useful as inhibitors to HMG-CoA reductase. Preparation of (3R,2S)-3,5-isopropyridinedioxy-6-heptanoate tert-Bu from 3-oxo-4-propanoate Me was shown.

=> s l4 and HPLC
151186 HPLC
L7 6 L4 AND HPLC

=> d 1-6 bib abs l7

L7 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:509977 CAPLUS
DN 141:54196
TI Procedure for the production optically active dihydropyrones from

10727225

optically active 5-hydroxy-3-ketoesters

IN Sauter, Markus; Schroeder, Juergen; Jaeger, Burkhard

PA Boehringer Ingelheim Pharma GmbH & Co. KG, Germany

SO Ger. Offen., 16 pp.
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

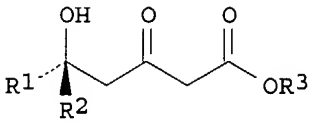
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10257761	A1	20040624	DE 2002-10257761	20021210
US 2004133032	A1	20040708	US 2003-727225	20031203
WO 2004052831	A2	20040624	WO 2003-EP13851	20031205

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ

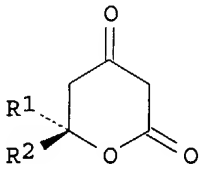
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI DE 2002-10257761 A 20021210

GI



I



II

AB A procedure for the production optically active 5-hydroxy-3-ketoesters [I; R1, R2 = (cyclo)alkyl, (un)substituted aryl, (alkenyl)aryl; R3 = (halo)alkyl, arylalkylene, trihydrocarbylsilyl] are prepared and resolved by **HPLC** using enantiomer-separation columns and the I enantiomers subjected to lactonization to give optically active dihydropyrones (II; e.g., tipranavir). A process flow diagram is presented.

L7 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:716678 CAPLUS

DN 132:93197

TI First systematic chiral syntheses of two pairs of enantiomers with 3,5-dihydroxyheptenoic acid chain, associated with a potent synthetic statin NK-104

AU Suzuki, Mikio; Yanagawa, Yoshinobu; Iwasaki, Hiroshi; Kanda, Hiroyasu; Yanagihara, Kazufumi; Matsumoto, Hiroo; Ohara, Yoshio; Yazaki, Yukari; Sakoda, Ryozo

CS Central Research Institute, Nissan Chemical Industries Ltd., Chiba, 274-8507, Japan

SO Bioorganic & Medicinal Chemistry Letters (1999), 9(20), 2977-2982
CODEN: BMCLE8; ISSN: 0960-894X

PB Elsevier Science Ltd.

DT Journal

LA English

OS CASREACT 132:93197

AB All 4 enantiomers of the synthetic statin NK-104 were prepared The syn diol

isomers (NK-104 and its enantiomer) were obtained efficiently by diastereomer resolution The anti diol isomers (3-epimer and 5-epimer) were prepared effectively by asym. aldol reaction followed by anti stereoselective reduction as key steps. Their purity detns. were effected by chiral **HPLC** anal.

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:306357 CAPLUS
DN 129:65035
TI Simultaneous determination of vitamin C and its carbamylated derivatives by high-performance liquid chromatography with post-column derivatization
AU Koshiishi, Ichiro; Mamura, Yoshie; Imanari, Toshio
CS Faculty of Pharmaceutical Sciences, Chiba University, Chiba, 263, Japan
SO Journal of Chromatography, A (1998), 806(2), 340-344
CODEN: JCRAEY; ISSN: 0021-9673
PB Elsevier Science B.V.
DT Journal
LA English
AB A highly sensitive method for the simultaneous determination of ascorbate (AsA), dehydroascorbate (DHA), 2,3-diketogulonate (2,3-DKG), carbamyl ascorbate (CAA) and carbamylated dehydroascorbate derivative (CDA) was developed by **HPLC** with post-column derivatization. The successful separation of these substances was achieved by an adsorption chromatog. using poly(ethylene glycol) copolymer as a packing material in the separation column. For the detection, each substance was boiled with benzamidine in alkaline solution, producing fluorescence products. Both CAA and CDA were alkaline-labile, degrading to AsA and 2,3-DKG, so that these carbamylated derivs. could be detected in a similar manner as AsA and 2,3-DKG, resp. The detection limits for quant. determination of these substances were <0.5 μM, and the coeffs. of variation of the peak areas were at 2.2-2.8%. The usefulness and practicability of the present method were verified by application to the determination of these substances in plant leaves soaked in 0.5M Na cyanate solution

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:638511 CAPLUS
DN 121:238511
TI Separation of 3-hydroxy-3-methylglutaryl-coenzyme A reductase inhibitor drug substance diastereomers and their analogs on β-cyclodextrin stationary phase
AU Kumar, Narendra; Windisch, Vincent; Trivedi, Pravin; Golebiowski, Chris
CS Department of Analytical and Physical Chemistry, Rhone-Poulenc Rorer Central Research, 500 Arcola Road, P.O. Box 1200, Collegeville, PA, 19426-0107, USA
SO Journal of Chromatography, A (1994), 678(2), 259-63
CODEN: JCRAEY; ISSN: 0021-9673
DT Journal
LA English
AB β-Cyclodextrin stationary phases are extremely useful in the separation of complex diastereomeric mixts. under normal-phase chromatog. conditions. The retention behavior of the 3-hydroxy-3-methylglutaryl (HMG)-CoA reductase inhibitors is influenced by the size and chain length of the polar alc. modifier. Retention time changes caused by different alc. modifiers can be explained by hydrogen bonding and steric effects involving the stationary phase, the analyte and the alc. modifier.

10727225

L7 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:52720 CAPLUS
DN 120:52720
TI Enantioselective microbial reduction of 3,5-dioxo-6-(benzyloxy) hexanoic acid, ethyl ester
AU Patel, Ramesh N.; Banerjee, Amit; McNamee, Clyde G.; Brzozowski, David; Hanson, Ronald L.; Szarka, Laszlo J.
CS Dep. Microbial Technol., Bristol-Myers Squibb Pharm. Res. Inst., New Brunswick, NJ, USA
SO Enzyme and Microbial Technology (1993), 15(12), 1014-21
CODEN: EMTED2; ISSN: 0141-0229
DT Journal
LA English
AB The key chiral intermediate 3,5-dihydroxy-6-(benzyloxy) hexanoic acid, Et ester 2a, was made by the stereoselective microbial reduction of 3,5-dioxo-6-(benzyloxy) hexanoic acid, Et ester 1. Among various microbial cultures evaluated, cell suspensions of Acinetobacter calcoaceticus SC 13876 reduced 1 to 2a. The reaction yield of 85% and optical purity of 97% was obtained using glycerol-grown cells. The substrate was used at 2 g/L and cells were used at 20% (w/v, wet cells) concns. The optimum pH for the reduction of 1 to 2a was 5.5 and the optimum temperature was 32°. Cell exts. of A. calcoaceticus SC 13876 in the presence of NAD+, glucose, and glucose dehydrogenase reduced 1 to the corresponding monohydroxy compds. 3 and 4 [3-hydroxy-5-oxo-6-(benzyloxy) hexanoic acid Et ester 3, and 5-hydroxy-3-oxo-6-(benzyloxy) hexanoic acid Et ester 4]. Both 3 and 4 were further reduced to 2a by cell exts. Reaction yield of 92% and optical purity of 99% were obtained when the reaction was carried out in a 1-1 batch using cell exts. The substrate was used at 10 g/L. Product 2a was isolated from the reaction mixture in 72% overall yield. The GC and **HPLC** area % purity of the isolated product was 99% and the optical purity was 99.5%. The reductase which converted 1 to 2a was purified about 200-fold from cell exts. of A. calcoaceticus SC 13876. The purified enzyme gave a single protein band on SDS-PAGE corresponding to 35,000 daltons.

L7 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:84064 CAPLUS
DN 116:84064
TI Chiral intermediates and the oscillatory effect of circular dichroism in the Belousov-Zhabotinskii type reaction of L-ascorbic acid
AU Buhse, Thomas; Thiemann, Wolfram
CS Fachbereich Chem., Univ. Bremen, Bremen, W-2800/33, Germany
SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (1991), 46(10), 1406-14
CODEN: ZNBSEN; ISSN: 0932-0776
DT Journal
LA English
AB Investigating the Belousov-Zhabotinskii (BZ) type reaction of an acidic L-ascorbic acid (AA)/potassium bromate/cerous sulfate system, an oscillatory effect of CD is detectable at λ = 300 nm. **HPLC** anal. of the oscillatory mixture and spectroscopic expts. indicate that this effect is caused by 3,4,5-trihydroxy-2-oxo-L-valeraldehyde (TVA) - a C(5) oxidation fragment of AA. Because of the bromide ion production occurring before the metal catalyst addns. the AA system shows no preoscillatory phase and a rather short entire length of oscillation up to a maximum of 20 min. Since AA is not brominated but oxidized by bromine which is formed by the Landolt type "clock reaction" of AA with acidic bromate, partially bromine-hydrolysis-controlled (BHC) oscillations are discussed for the overall mechanism of this BZ system.

10727225-2

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CA SUBSCRIBER PRICE	-11.03	-11.03

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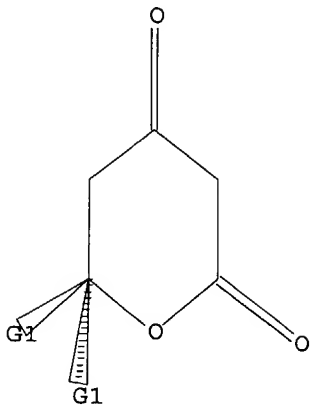

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PROJECTED ANSWERS: 112 TO 154

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FILE LAST UPDATED: 6 Aug 2004 (20040806/ED)

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92.2% PROCESSED 400000 ITERATIONS 112 ANSWERS
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SEARCH TIME: 00.00.03

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 433693 TO 433693
PROJECTED ANSWERS: 112 TO 154

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L11 90 L10

=> d 1-90 bib abs l11

L11 ANSWER 1 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:509977 CAPLUS
DN 141:54196
TI Procedure for the production optically active dihydropyrones from optically active 5-hydroxy-3-ketoesters
IN Sauter, Markus; Schroeder, Juergen; Jaeger, Burkhard
PA Boehringer Ingelheim Pharma GmbH & Co. KG, Germany
SO Ger. Offen., 16 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10257761	A1	20040624	DE 2002-10257761	20021210
	US 2004133032	A1	20040708	US 2003-727225	20031203
	WO 2004052831	A2	20040624	WO 2003-EP13851	20031205

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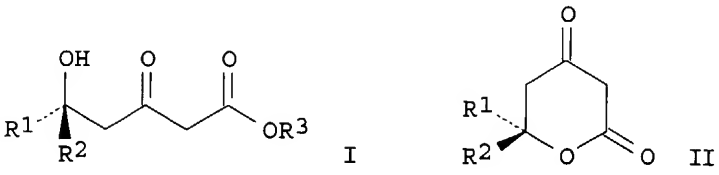
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM,
AZ, BY, KG, KZ
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG
PRAI DE 2002-10257761 A 20021210
GI



AB A procedure for the production optically active 5-hydroxy-3-ketoesters [I; R1, R2 = (cyclo)alkyl, (un)substituted aryl, (alkenyl)aryl; R3 = (halo)alkyl, arylalkylene, trihydrocarbylsilyl] are prepared and resolved by HPLC using enantiomer-separation columns and the I enantiomers subjected to lactonization to give optically active dihydropyrones (II; e.g., tipranavir). A process flow diagram is presented.

L11 ANSWER 2 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:151205 CAPLUS
DN 140:266123
TI Synthesis and evaluation of the molluscicidal activity of the 5,6-dimethyl-dihydro-pyran-2,4-dione and 6-substituted analogs
AU de Souza, Laura Cristiane; Feitosa dos Santos, Aldenir; Sant'Ana, Antonio Euzebio Goulart; Imbroisi, Dennis de Oliveira
CS CCEN, Departamento de Quimica, Laboratorio de Sintese Organica, LaSO, Universidade Federal de Alagoas, Maceio, AL, 57.072-970, Brazil
SO Bioorganic & Medicinal Chemistry (2004), 12(5), 865-869
CODEN: BMECEP; ISSN: 0968-0896
PB Elsevier Ltd.
DT Journal
LA English
AB Five dihydropiran-2,4-diones, including 5,6-dimethyldihydropiran-2,4-dione, one of the intermediates of the synthesis of caloverticilic acid, were synthesized and submitted to molluscicidal bioassay. The yields varied from moderate to good (42%- 80%) and were achieved through the preparation of the dianion of Et acetoacetate, reaction with and aldehyde, followed by hydrolysis of the ester (NaOH, H2O, 2 h, T.A.) and lactonization in acidic medium (HCl, 0°C). The 5,6-dimethyldihydropiran-2,4-dione and 6-phenyl-, 6-(4-methoxyphenyl)-, and 6-propenyldihydropyran-2,4-dione showed significant activities against the Biomphalaria glabrata egg masses, while the analogous 6-(3,4-dimethoxyphenyl) derivative was inactive as molluscicide. This activity is reported for the first time, extending the range of biol. activities of this group.
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:822554 CAPLUS
DN 140:55439
TI Understanding Substrate Specificity of Polyketide Synthase Modules by Generating Hybrid Multimodular Synthases

10727225-2

AU Watanabe, Kenji; Wang, Clay C. C.; Boddy, Christopher N.; Cane, David E.; Khosla, Chaitan
CS Department of Chemical Engineering, Stanford University, Stanford, CA, 94305, USA
SO Journal of Biological Chemistry (2003), 278(43), 42020-42026
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
AB Modular polyketide biosynthesis can be harnessed to generate rationally designed complex natural products through bioengineering. A detailed understanding of the features that govern transfer and processing of polyketide biosynthetic intermediates is crucial to successfully engineer new polyketide pathways. Previous studies have shown that substrate stereochem. and protein-protein interactions between polyketide synthase modules are both important factors in this process. Here we investigated the substrate tolerance of different polyketide modules and assessed the relative importance of inter-module chain transfer vs. chain elongation activity of some of these modules. By constructing a variety of hybrid modular polyketide synthase systems and assaying their ability to generate polyketide products, it was determined that the substrate tolerance of each individual ketosynthase domain is an important parameter for the successful recombination of polyketide synthase modules. Surprisingly, however, failure by a module to process a candidate substrate was not due to its inability to bind to it. Rather, it appeared to result from a blockage in carbon-carbon bond formation, suggesting that proper orientation of the initially formed acyl thioester in the ketosynthase active site was important for the enzyme-catalyzed decarboxylative condensation reaction.
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:818064 CAPLUS
DN 139:322385
TI Combinatorial polyketide libraries produced using a modular erythromycin polyketide synthase gene cluster from Saccharopolyspora erythraea as scaffold
IN Khosla, Chaitan; Ashley, Gary; Fu, Hong; Kao, Camilla M.; McDaniel, Robert
PA USA
SO U.S. Pat. Appl. Publ., 43 pp., Cont.-in-part of U.S. Ser. No. 311,756.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 15

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003194785	A1	20031016	US 2003-340139	20030110
	US 5672491	A	19970930	US 1994-238811	19940506
	JP 2003038175	A2	20030212	JP 2002-200189	19940920
	JP 2003204784	A2	20030722	JP 2002-373049	19940920
	JP 2003325178	A2	20031118	JP 2003-161286	19940920
	US 5712146	A	19980127	US 1995-486645	19950607
	US 6080555	A	20000627	US 1996-675817	19960705
	US 2002034797	A1	20020321	US 1997-846247	19970430
	US 6391594	B2	20020521		
	US 6066721	A	20000523	US 1997-896323	19970717
	US 6558942	B1	20030506	US 1998-73538	19980506
	WO 9903986	A2	19990128	WO 1998-US14911	19980717
	WO 9903986	A3	19990408		

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NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	US 6500960	B1	20021231	US 1999-311756	19990514
	AU 769288	B2	20040122	AU 2001-57805	20010803
	US 2002110874	A1	20020815	US 2001-925236	20010808
	JP 2004083592	A2	20040318	JP 2003-336370	20030926
PRAI	US 1993-123732	B2	19930920		
	US 1993-164301	B2	19931208		
	US 1994-238811	A2	19940506		
	US 1995-486645	A2	19950607		
	US 1995-3338P	P	19950706		
	US 1996-675817	A2	19960705		
	US 1997-846247	A2	19970430		
	US 1997-896323	A2	19970717		
	US 1998-73538	A1	19980506		
	WO 1998-US14911	A	19980717		
	US 1998-164306	B1	19981001		
	US 1999-311756	A2	19990514		
	JP 1995-509422	A3	19940920		
	JP 2002-200189	A3	19940920		
	US 1998-79919P	P	19980305		
	AU 1998-71722	A3	19980430		
	US 1999-263184	A1	19990305		

AB Combinatorial libraries of polyketides can be obtained by suitable manipulation of a host modular polyketide synthase gene cluster such as that which encodes the polyketide synthase (PKS) for erythromycin in Saccharopolyspora erythraea. Thus, erythromycin PKS genes are transformed into Escherichia coli and moved into Streptomyces coelicolor for expression. The three erythromycin DEBS modular proteins are used as scaffolds for replacing AT (aminotransferase) and KR (ketoreductase) domains with Streptomyces hygroscopicus rapamycin PKS cassettes. DEBS reductive cycle domains are excised and macrolide ring size is manipulated by directed mutagenesis of DEBS. The combinatorial library is useful as a source of pharmaceutically active compds. In addition, novel polyketides and antibiotics are prepared using this method.

L11 ANSWER 5 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:789442 CAPLUS
DN 140:16881
TI Totally Stereoselective Synthesis of 1,3-Disaccharides through Diels-Alder Reactions
AU Bartolozzi, Alessandra; Pacciani, Stefania; Benvenuti, Cecilia; Cacciarini, Martina; Liguori, Francesca; Menichetti, Stefano; Nativi, Cristina
CS Dipartimento di Chimica Organica Ugo Schiff, Universita di Firenze, Sesto Fiorentino, I-50019, Italy
SO Journal of Organic Chemistry (2003), 68(22), 8529-8533
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
OS CASREACT 140:16881
AB A nonclassical, totally stereoselective synthesis of orthogonally protected 1,3-disaccharides is reported. Enantiomerically pure β-keto-δ-lactones, efficiently obtained from glucal and galactal, are transformed into electron-poor heterodienes and chemo-, regio-, and stereoselectively cycloadded to glycals as electron-rich dienophiles, to directly afford 2-thiodisaccharides. The reductive desulfurization of the latter smoothly gave the corresponding

2,2'-dideoxydisaccharides.
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 6 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:747122 CAPLUS
DN 139:377133
TI Substrate Recognition and Channeling of Monomodules from the Pikromycin Polyketide Synthase
AU Beck, Brian J.; Aldrich, Courtney C.; Fecik, Robert A.; Reynolds, Kevin A.; Sherman, David H.
CS Department of Microbiology, University of Minnesota, Minneapolis, MN, 55455, USA
SO Journal of the American Chemical Society (2003), 125(41), 12551-12557
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 139:377133
AB The unique ability of the pikromycin (Pik) polyketide synthase to generate 12- and 14-membered ring macrolactones presents an opportunity to explore the fundamental processes underlying polyketide synthesis, specifically the mechanistic details of the chain extension process. We have overexpressed and purified PikAIII (module 5) and PikAIV (module 6) and assessed the ability of these proteins to generate tri- and tetraketide lactone products using N-acetylcysteamine-activated diketides and 14C-methylmalonyl-CoA as substrates. Comparison of the stereochem. specificities for PikAIII and PikAIV and the reported values for the DEBS modules reveals significant differences between these systems.
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 7 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:696737 CAPLUS
DN 139:230623
TI Syntheses of kavalactone analogs substituted 5,6-dihydro-2-pyrone compounds
IN Chen, Shoujun; McCleary, Joel; Sun, Lijun
PA Kava Pharmaceuticals, Inc., USA
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003072103	A1	20030904	WO 2003-US6103	20030227
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003236302	A1	20031225	US 2003-376800	20030227
PRAI US 2002-359864P	P	20020227		

OS MARPAT 139:230623
AB This invention relates to novel kavalactone analogs, 5,6-dihydro-2-

pyranone compds. having 3-substitution with H, OH, or C2-C5 alkoxyl; and 6-substitution with 2-Ph Et, 2-Ph ethenyl, 2-heteroaryl Et, or 2-heteroaryl ethenyl; in which the Ph or the heteroaryl is optionally mono-, di-, or tri- substituted with Cl, F, Br, I, CN, C1-C5 alkyl, C1-C5 alkoxyl, C3-C5 alkenyloxy, C4-C6 cycloalkoxyl, C4-C8 cycloalkyl alkoxyl, C3-C5 alkoxy alkoxyl, or C1-C4 alkoxy carbonyl. The patent also relates to a pharmaceutical composition comprising a compound described above for a pharmaceutically acceptable carrier, treating a neurodegenerative disorder, eliciting an anticonvulsive, providing antiepileptic effect, or treating a neurol. or psychiatric disorder. Thus, S-(+)-6-Phenethyldihydropyran-2,4-dione was prepared by reacting (S)-(-)-α,α-diphenyl-2-pyrrolidinemethanol with 3-oxo-5-phenylpentanoic acid Me ester in presence of borane-dimethyl sulfide complex giving an intermediate 3-hydroxy-5-phenylpentanoic acid Me ester, reacting with tert-Bu acetate to 5-hydroxy-3-oxo-7-phenylheptanoic acid tert-Bu ester, and stirring with TFA in DCM at room temperature for 18 h. The S-(+)-6-Phenethyldihydropyran-2,4-dione was evaluated using in vitro assay of human monocytic THP-1 cells and showed cell toxicity.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 8 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:421769 CAPLUS
DN 139:246151
TI The cycloaddition way to novel deoxy disaccharide analogs
AU Tamarez, Maria M.; Franck, Richard W.; Geer, Aloma
CS Department of Chemistry, Hunter College of CUNY, New York, NY, 10021, USA
SO Tetrahedron (2003), 59(24), 4249-4259
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 139:246151
AB A novel heterocycloaddn. merges 2-thiono-3-ketolactones with carbohydrate glycals to afford materials which resemble disaccharides with an O-glycosidic linkage at the anomeric center and a thioether linking both C-2 and C-2', thus creating a third heterocyclic ring. Upon desulfurization, these novel cycloadducts afford materials which are models for 2-deoxydisaccharides. Studies with two keto lactones and seven glycals are described.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 9 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:348742 CAPLUS
DN 138:367664
TI Combinatorial polyketide libraries produced using a modular polyketide synthase gene cluster as scaffold
IN Khosla, Chaitan; Kao, Camilla M.
PA The Leland Stanford Junior University, USA
SO U.S., 59 pp., Cont.-in-part of U.S. 6,391,594.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 15

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6558942	B1	20030506	US 1998-73538	19980506
	US 5672491	A	19970930	US 1994-238811	19940506
	US 5712146	A	19980127	US 1995-486645	19950607
	US 2002034797	A1	20020321	US 1997-846247	19970430
	US 6391594	B2	20020521		

	US 6117659	A	20000912	US 1999-320878	19990527
	US 6509455	B1	20030121	US 2000-657440	20000907
	US 2003104597	A1	20030605	US 2001-793708	20010222
	US 2003040084	A1	20030227	US 2001-852416	20010509
	US 2002068332	A1	20020606	US 2001-859854	20010516
	AU 769288	B2	20040122	AU 2001-57805	20010803
	US 2003148469	A1	20030807	US 2002-201365	20020722
	US 2003170725	A1	20030911	US 2002-213926	20020806
	US 2003194785	A1	20031016	US 2003-340139	20030110
PRAI	US 1994-238811	A2	19940506		
	US 1995-486645	A2	19950607		
	US 1997-846247	A2	19970430		
	US 1998-79919P	P	19980305		
	US 1993-123732	B2	19930920		
	US 1993-164301	A2	19931208		
	US 1995-3338P	P	19950706		
	US 1996-675817	A2	19960705		
	US 1997-896323	A2	19970717		
	US 1998-76919P	P	19980305		
	AU 1998-71722	A3	19980430		
	US 1998-73538	A2	19980506		
	US 1998-87080P	P	19980528		
	WO 1998-US14911	W	19980717		
	US 1998-141908	A2	19980828		
	US 1998-100880P	P	19980922		
	US 1998-164306	B1	19981001		
	US 1999-119139P	P	19990208		
	US 1999-311756	A2	19990514		
	US 1999-134990P	P	19990520		
	US 1999-320878	A3	19990527		
	US 2000-657440	A2	20000907		

OS MARPAT 138:367664

AB Combinatorial libraries of polyketides can be obtained by suitable manipulation of a host modular polyketide synthase gene cluster such as that which encodes the PKS for erythromycin. Thus, modular domains of 6-deoxyerythronolide B synthase (DEBS) from Saccharopolyspora erythraea are substituted with domains from the rapamycin polyketide synthase of Streptomyces hygroscopicus, and cloned into cultures of S. coelicolor for polyketide synthesis. Macrolide ring size is also manipulated by site-directed mutagenesis of DEBS. The combinatorial library is useful as a source of pharmaceutically active compds. In addition, novel polyketides and antibiotics are prepared using this method.

RE.CNT 102 THERE ARE 102 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 10 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:313056 CAPLUS
DN 139:149448
TI Toward the total synthesis of phorboxazole A: synthesis of an advanced C4-C32 subunit using the Jacobsen hetero Diels-Alder reaction
AU Paterson, Ian; Luckhurst, Chris A.
CS University Chemical Laboratory, Cambridge, CB2 1EW, UK
SO Tetrahedron Letters (2003), 44(19), 3749-3754
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 139:149448
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

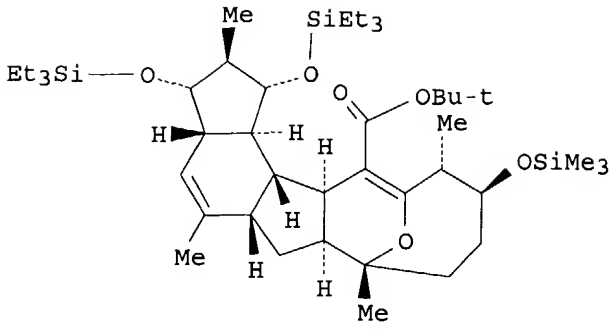
AB The tetrahydropyranone I, representing a pentacyclic C4-C32 segment of the phorboxazoles, was obtained by a complex hetero Diels-Alder (HDA) coupling performed between the 2-siloxydiene II and the oxazole aldehyde III, mediated by the chiral tridentate Cr(III) catalyst. In preliminary studies, the tetrahydropyrans IV, V (R = H, α-OCOCMe3) and V (R = CH2) were accessed using this same asym. HDA methodol. with varying stereoselectivity.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 11 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:298268 CAPLUS
DN 139:18936
TI Expression and Kinetic Analysis of the Substrate Specificity of Modules 5 and 6 of the Picromycin/Methymycin Polyketide Synthase
AU Yin, Yifeng; Lu, Hongxiang; Khosla, Chaitan; Cane, David E.
CS Department of Chemistry, Brown University, Providence, RI, 02912-9108, USA
SO Journal of the American Chemical Society (2003), 125(19), 5671-5676
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB Picromycin synthase (PICS) is a multifunctional, modular polyketide synthase (PKS) that catalyzes the conversion of methylmalonyl-CoA to narbonolide and 10-deoxymethynolide, the macrolide aglycon precursors of the antibiotics picromycin and methymycin, resp. PICS modules 5 and 6 were each expressed in Escherichia coli with a thioesterase domain at the C-terminus to allow release of polyketide products. The substrate specificity of PICS modules 5+TE and 6+TE was investigated using N-acetylcysteamine thioesters of 2-methyl-3-hydroxy-pentanoic acid as diketide analogs of the natural polyketide chain elongation substrates. PICS module 5+TE could catalyze the chain elongation of only the syn diketide (2S,3R)-4, while PICS module 6+TE processed both syn diastereomers, (2S,3R)-4 and (2R,3S)-5, with a 2.5:1 preference in kcat/Km for 5 but did not turn over either of the two anti diketides. The observed substrate specificity patterns are in contrast to the 15-100:1 preference for 4 over 5 previously established for several modules of the closely related erythromycin PKS, 6-deoxyerythronolide B synthase (DEBS).
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 12 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:278886 CAPLUS
DN 139:22036
TI An Enantioselective Synthesis of FR182877 Provides a Chemical Rationalization of Its Structure and Affords Multigram Quantities of Its Direct Precursor
AU Vanderwal, Christopher D.; Vosburg, David A.; Weiler, Sven; Sorensen, Erik J.
CS Department of Chemistry and The Skaggs Institute for Chemical Biology, Scripps Research Institute, La Jolla, CA, 92037, USA
SO Journal of the American Chemical Society (2003), 125(18), 5393-5407
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 139:22036
GI

10727225-2



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AB The evolution of a strategy culminating in an efficient, enantioselective synthesis of the potent microtubule-stabilizing agent FR182877 is described. Guided by a proposed biogenesis of this complex natural product, a solution emerged that involved the first reported example of a double transannular Diels-Alder reaction to fashion the key elements of its hexacyclic structure. This pivotal transformation creates a complex pentacycle I from a 19-membered macrocyclic pentaene, forming seven new stereogenic centers in a fully diastereocontrolled fashion. The efficiency of the approach ultimately enabled the preparation of multigram quantities of the direct precursor of FR182877 for conversion to the relatively unstable natural product when required. The reactivity of the strained, bridgehead olefin of this secondary metabolite with biol. relevant nucleophiles is also described.

RE.CNT 182 THERE ARE 182 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 13 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:238678 CAPLUS
DN 138:398020
TI Iterative Chain Elongation by a Pikromycin Monomodular Polyketide Synthase
AU Beck, Brian J.; Aldrich, Courtney C.; Fecik, Robert A.; Reynolds, Kevin A.; Sherman, David H.
CS Department of Microbiology and Biotechnology Institute and Department of Medicinal Chemistry, University of Minnesota, Minneapolis, MN, USA
SO Journal of the American Chemical Society (2003), 125(16), 4682-4683
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB The unique ability of the pikromycin polyketide synthase (Pik PKS) to generate 12- and 14-membered ring macrolactones presents an opportunity to explore the fundamental processes of polyketide synthesis, specifically, the mechanistic details of the chain extension process. We have overexpressed and purified PikAIII and PikAIV and demonstrated the ability of these proteins to generate triketide lactone products using 14C-methylmalonyl-CoA as the sole substrate. Monomodular PikAIII generates TKL (1) when reacted alone, and synthesizes TKL (2) upon reaction in combination with PikAIV. Product formation remains dependent on the enzymic decarboxylation of methylmalonyl-CoA and transfer of the acyl chain within the enzyme rather than acylation by propionyl-CoA from spontaneous decarboxylation. We propose that synthesis of TKL (1) by PikAIII involves iterative assembly of the triketide chain within a PikAIII homodimer analogous to the nonmodular type I PKS systems.

10727225-2

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 14 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:155021 CAPLUS
DN 138:199945
TI Combinatorial polyketide libraries produced using a modular polyketide synthase gene cluster as scaffold
IN Khosla, Chaitan; Ashley, Gary; Fu, Hong; Kao, Camilla M.; McDaniel, Robert
PA USA
SO U.S. Pat. Appl. Publ., 45 pp., Cont.-in-part of U.S. Ser. No. 311,756.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 15

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003040084	A1	20030227	US 2001-852416	20010509
	US 5672491	A	19970930	US 1994-238811	19940506
	JP 2003038175	A2	20030212	JP 2002-200189	19940920
	JP 2003204784	A2	20030722	JP 2002-373049	19940920
	JP 2003325178	A2	20031118	JP 2003-161286	19940920
	US 5712146	A	19980127	US 1995-486645	19950607
	US 6080555	A	20000627	US 1996-675817	19960705
	US 2002034797	A1	20020321	US 1997-846247	19970430
	US 6391594	B2	20020521		
	US 6066721	A	20000523	US 1997-896323	19970717
	US 6558942	B1	20030506	US 1998-73538	19980506
	WO 9903986	A2	19990128	WO 1998-US14911	19980717
	WO 9903986	A3	19990408		
	W: AL, AM, AU, AZ, BA, BB, BG, BR, CA, CN, CU, CZ, EE, FI, GE, HU, IL, IS, JP, KG, KP, KR, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6500960	B1	20021231	US 1999-311756	19990514
	AU 769288	B2	20040122	AU 2001-57805	20010803
	US 2002110874	A1	20020815	US 2001-925236	20010808
	JP 2004083592	A2	20040318	JP 2003-336370	20030926
PRAI	US 1993-123732	B2	19930920		
	US 1993-164301	B2	19931208		
	US 1994-238811	A2	19940506		
	US 1995-486645	A2	19950607		
	US 1995-3338P	P	19950706		
	US 1996-675817	A2	19960705		
	US 1997-846247	A2	19970430		
	US 1997-896323	A2	19970717		
	US 1998-76919P	P	19980305		
	US 1998-73538	A1	19980506		
	WO 1998-US14911	W	19980717		
	US 1998-164306	B1	19981001		
	US 1999-311756	A2	19990514		
	JP 1995-509422	A3	19940920		
	JP 2002-200189	A3	19940920		
	US 1998-79919P	P	19980305		
	AU 1998-71722	A3	19980430		
	US 1999-263184	A1	19990305		

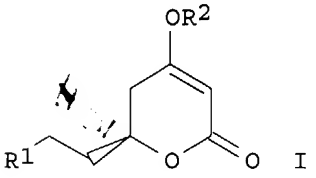
OS MARPAT 138:199945
AB Combinatorial libraries of polyketides can be obtained by suitable manipulation of a host modular polyketide synthase gene cluster such as

that which encodes the PKS for erythromycin. The combinatorial library is useful as a source of pharmaceutically active compds. In addition, novel polyketides and antibiotics are prepared using this method.

L11 ANSWER 15 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:133055 CAPLUS
DN 138:187566
TI Asymmetric synthesis of kavalactone derivatives
IN McCleary, Joel; Sun, Lijun; Chen, Shojun
PA Kava Pharmaceuticals, Inc., USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003013542	A1	20030220	WO 2002-US24742	20020805
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003060633	A1	20030327	US 2001-923462	20010806
US 6677462	B2	20040113		
EP 1414463	A1	20040506	EP 2002-752691	20020805
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
PRAI US 2001-923462	A1	20010806		
WO 2002-US24742	W	20020805		

OS CASREACT 138:187566; MARPAT 138:187566
GI



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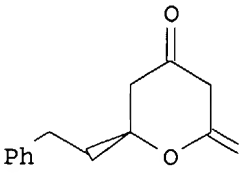


III

AB The present invention relates to preparation of enantio-enriched kavalactone compds. and derivs. such as I [R1 = alkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, each optionally substituted with 1 to 4 independent NR3R3, C(O)NR3R3, OR3, SR3, C(O)OR3, NO2, CN, halo, NR3C(O)R3, NR3S(O)nR3; n = 1 or 2; R2 = H, alkyl, arylalkyl, heteroarylalkyl, each optionally substituted with 1 to 4 independent NR3R3, C(O)NR3R3, OR3, SR3, C(O)OR3, NO2, CN, halo, NR3C(O)R3, NR3S(O)nR3; R3 = alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, arylalkyl, heteroarylalkyl, each optionally substituted 1-4 independent substituents selected from OH, mercapto, amino, alkoxy, carboxylic acid, ester, amido, halo, NO2, CN]. Thus, 3-oxo-5-phenyl-pentanoic acid Me ester was reduced with borane-dimethylsulfide complex in presence of (S)-(-)-α,α-diphenyl-2-pyrrolidinemethanol to provide (S)-5-phenyl-3-hydroxy-pentanoic

acid Me ester, which was reacted with tert-butylacetate to afford (S)-5-hydroxy-3-oxo-7-phenyl-heptanoic acid tert-Bu ester (II). II, on treatment with trifluoroacetic acid, yielded III which was methylated with dimethylsulfate to afford dihydrokawain I [R1 = Ph, R2 = Me]. The methods also provide compds. that are useful as reagents, or building blocks, in the construction of other enantio-enriched compds.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 16 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:948073 CAPLUS
DN 138:368633
TI Chemoenzymatic synthesis of optically active β,δ-dihydroxy esters
AU Wolberg, Michael
CS Germany
SO Berichte des Forschungszentrums Juelich (2002), Juel-3988, i-xv,1-138
CODEN: FJBEE5; ISSN: 0944-2952
DT Report
LA German
AB A new access to optically active β,δ-dihydroxy esters and δ-hydroxy-β-keto esters is presented. These compds. are valuable intermediates for the synthesis of important natural products and pharmaceuticals, e.g. HMG-CoA reductase inhibitors of the mevinic acid type. The synthesis strategy is based on an unprecedented highly regio- and enantioselective biocatalytic reduction of achiral β,δ-diketo esters. In a screening, two enantio-complementary biocatalysts were found to be particularly suitable for this purpose. Thus, the β,δ-diketo ester tert-Bu 6-chloro-3,5-dioxohexanoate was reduced by NADP(H)-dependent alc. dehydrogenase of Lactobacillus brevis to afford enantiomerically pure δ-hydroxy-β-keto ester tert-Bu (S)-6-chloro-5-hydroxy-3-oxohexanoate in a 72-84% isolated yield (>99.5% ee). The enzyme is readily available in the form of a crude cell extract from a recombinant E. coli strain (recLBADH). A scale-up of the one-step substrate synthesis (140 g scale) and of the enzymic reduction (70 g scale, substrate-coupled NADPH-regeneration) was established. The enantiomeric δ-hydroxy-β-keto ester tert-Bu (R)-6-chloro-5-hydroxy-3-oxohexanoate was obtained by reduction of tert-Bu 6-chloro-3,5-dioxohexanoate with Baker's yeast (Saccharomyces cerevisiae). A detailed investigation of the reaction parameters of this whole-cell transformation led to the application of a biphasic system by which the enantiomeric excess could be raised from 48% ee to 94% ee (50% isolated yield). The β-keto group of both enantiomers thus obtained was reduced by syn- and anti-selective borohydride redns. Combination of the reduction methods afforded all four stereoisomers of the crystalline β,δ-dihydroxy ester tert-Bu 6-chloro-3,5-dihydroxyhexanoate (>99% ee and dr > 200:1 each, 52-70% isolated yield). Alternatively, the syn-(3R,5S)-isomer of this known building block was obtained in one step and with high stereoisomeric purity by reduction of tert-Bu 6-chloro-3,5-dioxohexanoate with whole cells of Lactobacillus kefir. An iodide and an epoxide suitable for C-C-bond formation at C-6 were derived from tert-Bu syn-(3R,5S)-6-chloro-3,5-dihydroxyhexanoate. RecLBADH accepts a variety of β,δ-diketo esters as was determined in a photometric assay. The β,δ-diketo esters tert-Bu 3,5-dioxohexanoate and tert-Bu 3,5-dioxoheptanoate were reduced on a 1-10 mmol scale to afford the corresponding (R)-δ-hydroxy-β-keto esters with 99.4% ee and 98.1% ee, resp. (61-77% isolated yield). The reduction of the branched β,δ-diketo ester tert-Bu rac-4-methyl-3,5-dioxohexanoate proceeds via a dynamic kinetic resolution which resulted in a 66% isolated yield of the corresponding syn-(4S,5R)-δ-hydroxy-β-keto ester (99.2% ee, dr = 35:1). To underline the applicability of the virtually enantiopure enzymic products, they were used as starting materials for several new

natural product syntheses. Furthermore, a convenient process for the large-scale separation of noncrystg. diastereomeric syn- and anti-1,3-diols was developed. The crucial step of this new method is a diastereomer-differentiating hydrolysis of the resp. acetonides.

RE.CNT 293 THERE ARE 293 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 17 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:937724 CAPLUS
DN 138:149551
TI A Model of Structure and Catalysis for Ketoreductase Domains in Modular Polyketide Synthases
AU Reid, Ralph; Piagentini, Misty; Rodriguez, Eduardo; Ashley, Gary; Viswanathan, Nina; Carney, John; Santi, Daniel V.; Hutchinson, C. Richard; McDaniel, Robert
CS Kosan Biosciences, Inc., Hayward, CA, 94545, USA
SO Biochemistry (2003), 42(1), 72-79
CODEN: BICHAW; ISSN: 0006-2960
PB American Chemical Society
DT Journal
LA English
AB A putative catalytic triad consisting of tyrosine, serine, and lysine residues was identified in the ketoreductase (KR) domains of modular polyketide synthases (PKSs) based on homol. modeling to the short chain dehydrogenase/reductase (SDR) superfamily of enzymes. This was tested by constructing point mutations for each of these three amino acid residues in the KR domain of module 6 of the 6-deoxyerythronolide B synthase (DEBS) and determining the effect on ketoredn. Expts. conducted in vitro with the truncated DEBS Module 6+TE (M6+TE) enzyme purified from Escherichia coli indicated that any of three mutations, Tyr → Phe, Ser → Ala, and Lys → Glu, abolish KR activity in formation of the triketide lactone product from a diketide substrate. The same mutations were also introduced in module 6 of the full DEBS gene set and expressed in Streptomyces lividans for in vivo anal. In this case, the Tyr → Phe mutation appeared to completely eliminate KR6 activity, leading to the 3-keto derivative of 6-deoxyerythronolide B, whereas the other two mutations, Ser → Ala and Lys → Glu, result in a mixture of both reduced and unreduced compds. at the C-3 position. The results support a model analogous to SDRs in which the conserved tyrosine serves as a proton donating catalytic residue. In contrast to deletion of the entire KR6 domain of DEBS, which causes a loss in substrate specificity of the adjacent acyltransferase (AT) domain in module 6, these mutations do not affect the AT6 specificity and offer a potentially superior approach to KR inactivation for engineered biosynthesis of novel polyketides. The homol. modeling studies also led to identification of amino acid residues predictive of the stereochem. nature of KR domains. Finally, a method is described for the rapid purification of engineered PKS modules that consists of a biotin recognition sequence C-terminal to the thioesterase domain and adsorption of the biotinylated module from crude exts. to immobilized streptavidin. Immobilized M6+TE obtained by this method was over 95% pure and as catalytically effective as M6+TE in solution

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 18 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:732137 CAPLUS
DN 138:1581
TI Expression, site-directed mutagenesis, and steady state kinetic analysis of the terminal thioesterase domain of the methymycin/picromycin polyketide synthase
AU Lu, Hongxiang; Tsai, Shiou-Chuan; Khosla, Chaitan; Cane, David E.
CS Department of Chemistry, Brown University, Providence, RI, 02912-9108, USA

10727225-2

SO Biochemistry (2002), 41(42), 12590-12597
CODEN: BICHAW; ISSN: 0006-2960
PB American Chemical Society
DT Journal
LA English
AB The thioesterase (TE) domain of the methymycin/picromycin synthase (PICS) was functionally expressed in Escherichia coli, and the optimal N-terminal boundary of the recombinant TE was determined A series of diketide-N-acetylcysteamine (SNAC) thioesters were tested as substrates. PICS TE showed a strong preference for the 2-methyl-3-ketopentanoyl-SNAC substrate 5 over the stereoisomers of the reduced diketides 1-4, with an .apprx.1.6:1 preference for the (2R,3S)-2-methyl-3-hydroxy diastereomer 2 over the (2S,3R)-diketide 1. The closely related DEBS TE, the thioesterase from the 6-deoxyerythronolide B synthase, showed a more marked 4.4:1 preference for 2 over 1, with only a slightly greater preference for the 3-ketoacyl-SNAC substrate 5. The roles of several active site residues in PICS TE were examined by site-directed mutagenesis. Serine 148, which is part of the apparent catalytic triad consisting of S148, H268, and D176, was found to be essential for thioesterase activity, while replacement of D176 with asparagine (D176N) gave a mutant thioesterase that retained substantial, albeit reduced, hydrolytic activity toward diketide-SNAC substrates. Mutation of E187 and R191, each of which is thought to play a role in substrate binding, had only minor effects on the relative specificity for diketide substrates 1, 2, and 5. Finally, when PICS TE was fused to the C-terminus of DEBS module 3, the resultant chimeric protein converted diketide 1 with methylmalonyl-CoA to triketide ketolactone 6 with improved catalytic efficiency compared to that of the previously developed DEBS module 3-(DEBS)TE construct.
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 19 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:393024 CAPLUS
DN 138:95419
TI Oxidative degradation of a sulfonamide-containing 5,6-dihydro-4-hydroxy-2-pyrone in aqueous/organic cosolvent mixtures
AU Hovorka, Susan W.; Hageman, Michael J.; Schoneich, Christian
CS Department of Pharmaceutical Chemistry, The University of Kansas, Lawrence, KS, 66047, USA
SO Pharmaceutical Research (2002), 19(4), 538-545
CODEN: PHREEB; ISSN: 0724-8741
PB Kluwer Academic/Plenum Publishers
DT Journal
LA English
AB Purpose. To predict the oxidative stability of a sulfonamide-containing 5,6-dihydro-4-hydroxy-2-pyrone in lipid-based delivery systems, N-(3-{1[(3α,6R)-4-hydroxy-2-oxo-6-phenylethyl-6-propyltetrahydro-2H-pyran-3-yl]propyl}phenyl)-5-(trifluoromethyl)-2-pyridinylsulfonamide (DHP) was oxidized by peroxides and peroxyl radicals in binary mixts. of water and organic cosolvents. Methods. DHP was oxidized by hydrogen peroxide, t-butyl-hydroperoxide, or peroxyl radicals derived from the thermal decomposition of 2,2'-azobis(2-amidinopropane) dihydrochloride (AAPH) in 40% (volume/volume) organic cosolvent and 5 mM buffer at or near 40°C. Interactions between DHP and N-containing buffers and DH- were assessed by 1H-NMR spectroscopy. The formation of CO likely involves a free radical mechanism. Results. The reaction of DHP with peroxides in 40% (volume/volume) acetonitrile yields epimeric monohydroxylation products, R-OH and S-OH, at C-3 of the pyrone ring, and a keto-derivative (CO). Hydroxylation rates depend on the protonation state of DHP, and the nature of buffer and the organic cosolvent. Organonitriles accelerate the oxidation through formation of peroxycarboximidic acid. Peroxyl radicals do not yield significant amts.

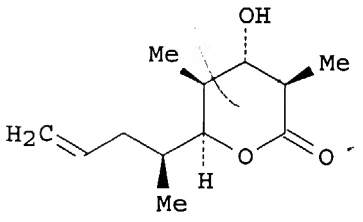
of R/S-OH or CO. Conclusions. The hydrogen peroxide-induced degradation of DHP in the presence of acetonitrile involves two reactions, hydroxylation and carbonyl formation. Hydroxylation proceeds via nucleophilic attack by the monodeprotonated form of DHP (DH-) on peroxycarboximidic acid. The oxidation rate is slowed by ion pairing between nitrogen-containing buffers ([3-N-morpholino]propane sulfonic acid and imidazole) and DH-. The formation of CO likely involves a free radical mechanism.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 20 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:332627 CAPLUS
DN 136:340539
TI Preparation of bio-intermediates for use in the chemical synthesis of polyketides via fermentation using recombinant polyketide synthase
IN Santi, Daniel; Ashley, Gary; Myles, David C.
PA USA
SO U.S. Pat. Appl. Publ., 69 pp., Cont.-in-part of U.S. Ser. No. 867,845.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002052028	A1	20020502	US 2001-927559	20010809
	WO 2001092991	A2	20011206	WO 2001-US17352	20010529
	WO 2001092991	A3	20020808		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2004018598	A1	20040129	US 2003-441787	20030519
PRAI	US 2000-224038P	P	20000809		
	US 2000-237382P	P	20001004		
	US 2000-248387P	P	20001113		
	US 2001-867845	A2	20010529		
	US 2000-207331P	P	20000530		
	WO 2001-US17352	A	20010529		
	US 2001-927559	A3	20010809		

OS MARPAT 136:340539
GI



I

AB The present invention relates to compds., e.g. I, made by a subset of modules from one or more polyketide synthase ("PKS") genes that are used

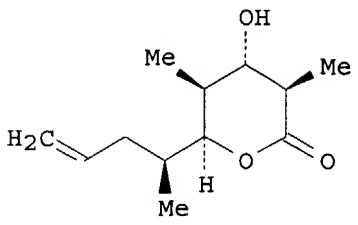
as starting material in the chemical synthesis of novel mols., particularly naturally occurring polyketides or derivs. thereof. The biol. derived intermediates ("bio-intermediates") generally represent particularly difficult compds. to synthesize using traditional chemical approaches due to one or more stereocenters. In one aspect of the invention, an intermediate in the synthesis of epothilone is provided that feeds into the synthetic protocol of Danishefsky and co-workers. In another aspect of the invention, intermediates in the synthesis of discodermolide are provided that feed into the synthetic protocol of Smith and co-workers. By taking advantage of the inherent stereochem. specificity of biol. processes, the syntheses of key intermediates and thus the overall syntheses of compds. like epothilone and discodermolide are greatly simplified.

L11 ANSWER 21 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:123244 CAPLUS
DN 136:183657
TI Process for the biomediated preparation of intermediates for use in the synthesis of polyketides, such as epothilone D and discodermolide
IN Santi, Daniel V.; Ashley, Gary; Myles, David C.
PA Kosan Biosciences, Inc., USA
SO PCT Int. Appl., 129 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002012534	A2	20020214	WO 2001-US25112	20010809
	WO 2002012534	A3	20020906		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	WO 2001092991	A2	20011206	WO 2001-US17352	20010529
	WO 2001092991	A3	20020808		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2001083275	A5	20020218	AU 2001-83275	20010809
	EP 1307579	A2	20030507	EP 2001-962062	20010809
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004520008	T2	20040708	JP 2002-517818	20010809
PRAI	US 2000-224038P	P	20000809		
	US 2000-237382P	P	20001004		
	US 2000-248387P	P	20001113		
	US 2001-867845	A	20010529		
	US 2000-207331P	P	20000530		
	WO 2001-US25112	W	20010809		

10727225-2

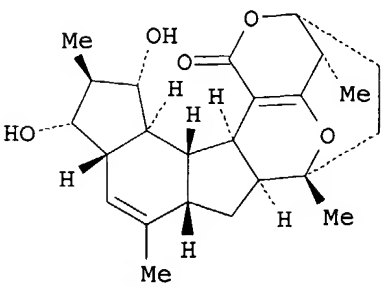
OS CASREACT 136:183657; MARPAT 136:183657
GI



I

AB The present invention relates to compds., such as I, made by a subset of modules from one or more polyketide synthase ("PKS") genes that are used as starting material in the chemical synthesis of novel mols., particularly naturally occurring polyketides or derivs. thereof. The biol. derived intermediates ("bio-intermediates") generally represent particularly difficult compds. to synthesize using traditional chemical approaches due to one or more stereocenters. In one aspect of the invention, an intermediate in the synthesis of epothilone is provided that feeds into the synthetic protocol of Danishefsky and co-workers. In another aspect of the invention, intermediates in the synthesis of discodermolide are provided that feed into the synthetic protocol of Smith and co-workers. By taking advantage of the inherent stereochem. specificity of biol. processes, the syntheses of key intermediates and thus the overall syntheses of compds. like epothilone and discodermolide are greatly simplified.

L11 ANSWER 22 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:861242 CAPLUS
DN 136:151022
TI Intramolecular Allenolate Acylations in Studies toward a Synthesis of FR182877
AU Vanderwal, Christopher D.; Vosburg, David A.; Sorensen, Erik J.
CS The Skaggs Institute for Chemical Biology and Department of Chemistry, The Scripps Research Institute, La Jolla, CA, 92037, USA
SO Organic Letters (2001), 3(26), 4307-4310
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
GI



I

AB Intramol. Claisen-type cleavage of the Evans-oxazolidinone with an acetate enolate followed by reduction of the resulting ketone using a borane-amine complex yielded β-hydroxy-δ-lactones, I and II, as fully functionalized polyketide precursors stereoselectively. Consequently, this reaction sequence constitutes a highly practical alternative to an acetate-aldol reaction.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 25 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:305643 CAPLUS
DN 135:166573
TI Asymmetric Hydrogenation of 4-Hydroxy-6-methyl-2-pyrone: Role of Acid-Base Interactions in the Mechanism of Enantiodifferentiation
AU Huck, W.-R.; Burgi, T.; Mallat, T.; Baiker, A.
CS Laboratory of Technical Chemistry, Swiss Federal Institute of Technology, ETH-Zentrum, Zurich, CH-8092, Switz.
SO Journal of Catalysis (2001), 200(1), 171-180
CODEN: JCTLA5; ISSN: 0021-9517
PB Academic Press
DT Journal
LA English
OS CASREACT 135:166573
AB Enantioselective hydrogenation of the pseudo-aromatic 4-hydroxy-6-methyl-2-pyrone to the corresponding 5,6-dihydropyrone has been studied over cinchonidine-modified Pd/Al2O3 and Pd/TiO2 catalysts. A mechanistic model for enantiodifferentiation is proposed, involving two H-bond interactions (N-H···O and O-H···O) between the deprotonated reactant and the protonated chiral modifier. The model can rationalize (i) the sense of enantiodifferentiation, i.e., the formation of (S)-product in the presence of cinchonidine as modifier; (ii) the complete loss of enantioselectivity when the acidic OH group of the reactant is deprotonated by a base stronger than the quinuclidine N of the alkaloid; and (iii) the poor enantiomeric excesses obtained in good H-bond donor or acceptor solvents. NMR and FTIR investigations, and ab initio calcns., of reactant-modifier interactions support the suggested model. Several factors, such as catalyst preredn. conditions, trace amts. of water, presence of strong bases and acids, and competing hydrogenation of acetonitrile to ethylamines, were found to affect the efficiency of this catalytic system. (c) 2001 Academic Press.
RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 26 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:266325 CAPLUS
DN 135:33420
TI Synthesis of 3-alkoxycarbonyl-3,5,5-trimethyl-6-R-2,3,5,6-tetrahydropyran-2,4-diones by Reformatsky reaction
AU Shchepin, V. V.; Fatukhova, Yu. Kh.; Kirillov, N. T.; Russkikh, N. Yu.; Litvinov, D. N.
CS Perm State University, Perm, 614600, Russia

10727225-2

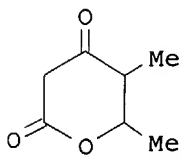
SO Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii) (2000), 36(8), 1120-1123
CODEN: RJOCEQ; ISSN: 1070-4280
PB MAIK Nauka/Interperiodica Publishing
DT Journal
LA English
OS CASREACT 135:33420
AB Dialkyl 2-methyl-2-(2-bromoisobutyryl)malonates react with zinc and aliphatic, unsatd., and aromatic aldehydes to yield 3-alkoxycarbonyl-3,5,5-trimethyl-6-R-2,3,5,6-tetrahydropyran-2,4-diones as a mixture of geometric isomers.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 27 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:218072 CAPLUS
DN 135:19223
TI Geminal Dicarboxylates as Carbonyl Surrogates for Asymmetric Synthesis. Part II. Scope and Applications
AU Trost, Barry M.; Lee, Chul Bom
CS Department of Chemistry, Stanford University, Stanford, CA, 94305, USA
SO Journal of the American Chemical Society (2001), 123(16), 3687-3696
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 135:19223
AB An enantioselective synthesis of allylic esters has been achieved by a novel asym. alkylation of allylic gem-dicarboxylates. The catalyst derived from diallyldichlorodipalladium and (R,R)-1,2-di(2'-diphenylphosphinobenzamido)cyclohexane efficiently induced the alkylation of 2-alkene-1,1,-dicarboxylates with a variety of nucleophiles to provide allylic esters as products in good yield and enantioselectivities. High regio- and enantioselectivities were observed in the alkylation with most nucleophiles derived from malonate, whereas a modest level of ee's was obtained in the reactions with less reactive nucleophiles such as bis(phenylsulfonyl)ethane. In the latter case, a slow addition procedure proved effective, leading to significantly improved ee's. The utility of the alkylation products was demonstrated by several synthetically useful transformations including allylic isomerizations, allylic alkylations, and Claisen rearrangements. Using these reactions, the chirality of the initial allylic carbon-oxygen bond could be transferred to new carbon-oxygen, carbon-carbon, or carbon-nitrogen bonds in a predictable fashion with high stereochem. fidelity. The conversion of gem-diesters to chiral esters by the substitution reaction is the equivalent of an asym. carbonyl addition by stabilized nucleophiles. In conjunction with the subsequent reactions that occur with high stereospecificity, allylic gem-dicarboxylates serve as synthons for double allylic transformations.
RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 28 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:200810 CAPLUS
DN 134:340364
TI Synthesis of 5,6-dimethyltetradehydropyran-2,4-dione, a key intermediate in the synthesis of the acids: inofiloidic, brasiliensic and isobrasiliensic, crystal structure of the cis and trans conformations of the enolic form
AU Pereira, Mariano Alves; Bastos, Jose Ronaldo R.; Imbroisi, Dennis Oliveira; De Simone, Carlos Alberto; De Sousa, Paulo T., Jr.; Martins, Domingos T.; Zukerman-Schpector, Julio; Caracelli, I.
CS Departamento de Quimica, Univ. Federal de Alagoas, Maceio, Brazil

10727225-2

SO Anais da Associacao Brasileira de Quimica (2000), 49(4), 204-207
CODEN: AABQAL; ISSN: 0365-0073
PB Associacao Brasileira de Quimica
DT Journal
LA English
OS CASREACT 134:340364
GI



I

AB The synthesis of 5,6-dimethyltetradehydropyran-2,4-dione (I)and the crystal structures of the cis and trans configurations of the enolic forms are described in this paper. Cis: C7H10O3, fw = 142.15, a = 6.506(2), b = 9.272(6), c = 12.358(1) Å, β = 99.49(1)°, V = 735.4(I) Å3, P21/c, Z = 4, R = 0.0403 for 1017 reflections and 93 refined parameters. The lactone ring is in a distorted half-boat conformation. Trans: C7H10O3, fw = 142.15, a = 7.427(I), b = 7.857(2), c = 14.874(3) Å, β = 103.17(2)°, V = 845.1(3) Å, P21/c, Z = 4, R = 0.0623 for 828 reflections and 123 refined parameters. The lactone ring presents static disorder.
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 29 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:172335 CAPLUS
DN 134:366765
TI Enantioselective synthesis of unsaturated cyclic tertiary ethers by Mo-catalyzed olefin metathesis
AU Cefalo, Dustin R.; Kiely, Andrew F.; Wuchrer, Margarita; Jamieson, Jennifer Y.; Schrock, Richard R.; Hoveyda, Amir H.
CS Department of Chemistry Merkert Chemistry Center, Boston College, Chestnut Hill, MA, 02467, USA
SO Journal of the American Chemical Society (2001), 123(13), 3139-3140
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 134:366765
GI

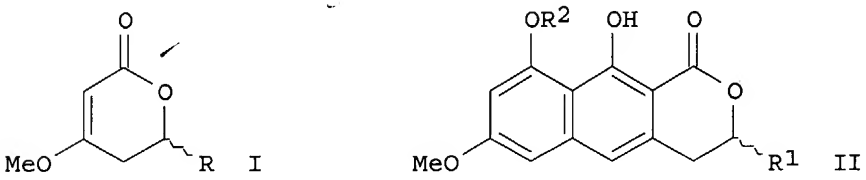
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Nonracemic pyrans were obtained by Mo-catalyzed enantioselective olefin metathesis of cyclopentenes in the presence of nonracemic molybdenum carbene complex I (R = R1 = Me2CH; R2 = Ph). E.g., cyclopentene II was stirred in toluene in a dry box; 5 mol% I was added and the solution stirred for 24 h at 50°; quenching with air and moist Et2O, chromatog. and distillation provided the nonracemic dihydropyran III in 95% yield and 91% ee. Dihydropyrans such as III could also be obtained by asym. olefin

metathesis of acyclic trienes, e.g., (H2C:CHCH2)2C(OCH2CH:CH2)CH2CH2Ph, in the presence of I. III was converted to nonracemic lactone IV, an intermediate in the preparation of the anti-HIV agent tipranavir V.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 30 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:65954 CAPLUS
DN 134:237327
TI Total synthesis of (R)- and (S)-semi-vioxanthin
AU Drochner, Daniel; Muller, Michael
CS Institut fur Biotechnologie 2, Forschungszentrum Julich GmbH, Julich, 52425, Germany
SO European Journal of Organic Chemistry (2001), (1), 211-215
CODEN: EJOCFK; ISSN: 1434-193X
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
OS CASREACT 134:237327
GI



AB Compds. (R)- and (S)-semivioxanthin were synthesized by a tandem Michael reaction of 2-benzyloxymethoxy-4-methoxy-6-methylbenzoate and the chiral Michael acceptors (I; R = Me). The key step for the formation of lactone I (R = α-Me) is a regio- and enantioselective, enzyme-catalyzed reduction of tert-Bu 3,5-dioxohexanoate by an alc.-dehydrogenase from Lactobacillus brevis. Compound I (R = β-Me) was synthesized by the Claisen condensation of tert-Bu acetate and Et (S)-3-hydroxy-butanoate. (R)- [II; R1 = α-Me, R2 = H] and (S)-semivioxanthin II (R1 = β-Me, R2 = H) were subsequently obtained by hydrogenolysis of the benzyloxymethyl groups in the protected (R)- II (R1 = α-Me, R2 = BOM) and (S)-semivioxanthins II (R1 = β-Me, R2 = BOM) resp.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 31 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:878656 CAPLUS
DN 134:178431
TI Transient behavior of the enantioselective hydrogenation of a hydroxymethylpyrone
AU Huck, W.-R.; Mallat, T.; Baiker, A.
CS Laboratory of Technical Chemistry, Swiss Federal Institute of Technology, ETH-Zentrum, Zurich, CH-8092, Switz.
SO Catalysis Letters (2000), 69(3,4), 129-132
CODEN: CALEER; ISSN: 1011-372X
PB Baltzer Science Publishers
DT Journal
LA English
OS CASREACT 134:178431
AB Various 2-pyrone derivs. are important intermediates in the synthesis of biol. active compds. Palladium, chirally modified by cinchona alkaloids, has a potential in the enantioselective hydrogenation of

4-hydroxy-6-methyl-2-pyrone to the corresponding 5,6-dihydropyrone. A study of various parameters (solvent, temperature, pressure, concentration) and catalyst systems (Pd/alumina and Pd/titania, modified by cinchonidine or cinchonine) revealed striking variations of the reaction rate and enantioselectivity with conversion. This transient behavior is interpreted by the effect of competitive adsorption and hydrogenation of the substrate and modifier.
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 32 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:573921 CAPLUS
DN 133:172993
TI Linker peptides for connecting modules of polyketide synthase and use of recombinant enzymes for preparing novel polyketides
IN Gokhale, Rajesh S.; Tsuji, Stuart Y.; Khosla, Chaitan
PA Board of Trustees of the Leland Stanford Junior University, USA
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000047724	A2	20000817	WO 2000-US3345	20000209
	WO 2000047724	A3	20001207		
	W: AU, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2359801	AA	20000817	CA 2000-2359801	20000209
	EP 1153124	A2	20011114	EP 2000-907235	20000209
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002536014	T2	20021029	JP 2000-598624	20000209
PRAI	US 1999-119363P	P	19990209		
	WO 2000-US3345	W	20000209		

AB The linking sequences which modulate cross-talk between modules of Type I polyketide synthases have been identified. Thus, arbitrarily chosen modules can be mixed and matched by supplying the appropriate linkers to obtain desired polyketide synthases and new polyketides. The modules are provided suitable linkers so that the polyketide chain is passed from one module to the other in the correct sequence. Thus, a construct containing the first module of the erythromycin polyketide synthase fused via a linker of the invention to the fifth module of the rifamycin polyketide synthase was expressed in Streptomyces coelicolor. A triketide was formed when 2S,3R-2-methyl-3-hydroxypentanoic acid and methylmalonyl CoA was supplied.

L11 ANSWER 33 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:507289 CAPLUS
DN 133:310089
TI Synthetic studies on the pederin family of antitumor agents. Syntheses of mycalamide B, theopederin D and pederin
AU Kocienski, Philip; Narquizian, Robert; Raubo, Piotr; Smith, Christopher; Farrugia, Louis J.; Muir, Kenneth; Boyle, F. Thomas
CS Department of Chemistry, Glasgow University, Glasgow, G12 8QQ, UK
SO Perkin 1 (2000), (15), 2357-2384
CODEN: PERKF9
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 133:310089
AB A general modular approach to the members of the pederin family of

antitumor agents is exemplified by syntheses of mycalamide B and theopederin D as well as a formal synthesis of pederin. All three compds. are prepared from 6-lithio-2,3-dimethyl-4-phenylselenomethyl-3,4-dihydro-2H-pyran and 2-(3-chloropropyl)-3,3-dimethyl-3,4-dihydro-2H-pyran-4-one.
RE.CNT 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

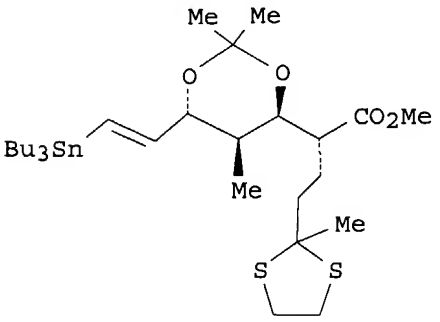
L11 ANSWER 34 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:443487 CAPLUS
DN 133:222545
TI Synthesis and asymmetric hydrogenation of 3,5-dioxoheptanedioates. Preparation of enantiomerically pure substituted δ-valerolactones
AU Kiegiel, J.; Jozwik, J.; Wozniak, K.; Jurczak, J.
CS Chemistry Department, University of Warsaw, Warsaw, 02-093, Pol.
SO Tetrahedron Letters (2000), 41(25), 4959-4963
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 133:222545
AB The synthesis of 3,5-dioxoheptanedioic acid derivs. based on the reaction of ketene with malonyl chloride was developed. Resulting diketones were subjected to Ru-(S)-BINAP-catalyzed asym. hydrogenation. The products were transformed into enantiomerically pure 3,5-substituted-δ-valerolactones.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 35 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:406025 CAPLUS
DN 133:237805
TI Potential and Limitations of Palladium-Cinchona Catalyst for the Enantioselective Hydrogenation of a Hydroxymethylpyrone
AU Huck, W.-R.; Mallat, T.; Baiker, A.
CS Laboratory of Technical Chemistry, Swiss Federal Institute of Technology, ETH-Zentrum, Zurich, CH-8092, Switz.
SO Journal of Catalysis (2000), 193(1), 1-4
CODEN: JCTLA5; ISSN: 0021-9517
PB Academic Press
DT Journal
LA English
OS CASREACT 133:237805
AB The Pd-catalyzed enantioselective hydrogenation of 4-hydroxy-6-methyl-2-pyrone afforded up to 85% excess of the (S)-enantiomer of the corresponding 5,6-dihydropyrone, under very mild conditions (1 bar, room temperature). This is the highest enantioselectivity achieved so far with chirally modified Pd, demonstrating the potential of this catalyst in the enantioselective hydrogenation of unsatd. compds. A complicating feature of the reaction is the limited stability of cinchonidine under reaction conditions, which results in a decline of the initial enantiomeric excess (ee) with reaction time. Continuous feeding of a minute amount of cinchonidine during reaction allows maintenance of the high initial ee with an overall substrate/modifier molar ratio of .apprx.20. (c) 2000 Academic Press.
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 36 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:293394 CAPLUS
DN 133:131674
TI Analysis of the Molecular Recognition Features of Individual Modules Derived from the Erythromycin Polyketide Synthase

AU Wu, Nicholas; Kudo, Fumitaka; Cane, David E.; Khosla, Chaitan
CS Departments of Chemical Engineering Chemistry and Biochemistry, Stanford University, Stanford, CA, 94305-5025, USA
SO Journal of the American Chemical Society (2000), 122(20), 4847-4852
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB 6-Deoxyerythronolide B synthase (DEBS), the multifunctional enzyme responsible for the biosynthesis of the macrolide aglycon of the antibiotic erythromycin, is an excellent model system for studying the properties of modular polyketide synthases. In these studies, we analyzed the substrate specificity of selected individual modules of DEBS. Unexpectedly, we observed (i) a high degree of similarity in the specificity of all modules tested, despite the diverse structural features of their natural substrates, and (ii) a distinct preference by all modules for syn diketides over anti diketides. The implications of these results are analyzed from an evolutionary and a protein engineering perspective.
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 37 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:246873 CAPLUS
DN 133:30938
TI A stereoselective synthesis of the C13-C19 fragment of sanglifehrin A
AU Hall, Philip; Brun, Jvan; Denni, Donatienne; Metternich, Rainer
CS Novartis Pharma AG, Basel, CH-4002, Switz.
SO Synlett (2000), (3), 315-318
CODEN: SYNLES; ISSN: 0936-5214
PB Georg Thieme Verlag
DT Journal
LA English
OS CASREACT 133:30938
GI



I

AB A short, stereoselective route to the C13-C19 fragment I of the immunosuppressant sanglifehrin A was accomplished. The key step involved a highly diastereoselective boron aldol reaction between β-ketoimide II and triisopropylsilyl propargyl aldehyde.
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 38 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:34981 CAPLUS
DN 132:105268
TI Fusion proteins of polyketide synthase functional domains and their use in the generation of novel polyketides

10727225-2

IN Kellenberger, Johannes Laurenz; Leadlay, Peter Francis; Staunton, James; Stutzman-Engwall, Kim Jonelle; McArthur, Hamish Alastair Irvine
PA Biotica Technology Limited, UK; Pfizer Inc.
SO PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000001827	A2	20000113	WO 1999-GB2158	19990706
	WO 2000001827	A3	20000427		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9946365	A1	20000124	AU 1999-46365	19990706
	AU 762185	B2	20030619		
	BR 9911898	A	20010327	BR 1999-11898	19990706
	EP 1095147	A2	20010502	EP 1999-929580	19990706
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	TR 200100027	T2	20010723	TR 2001-200100027	19990706
	JP 2002519066	T2	20020702	JP 2000-558217	19990706
	NZ 509602	A	20031219	NZ 1999-509602	19990706
	ZA 2001000775	A	20011105	ZA 2001-775	20010126
PRAI	GB 1998-14622	A	19980706		
	WO 1999-GB2158	W	19990706		

AB Fusion proteins of different catalytic domains of type I polyketide synthases that can be used to manufacture novel polyketides with possible antibiotic use are described. A basic vector that uses an erythromycin polyketide synthase gene modified with a number of multicloning sites is described. Saccharopolyspora erythraea and Streptomyces avermitilis were used as expression hosts. Minor changes in the sequence of the gene resulted in changes in the patterns of triketides synthesized and in some cases resulted in the appearances of novel polyketides.

L11 ANSWER 39 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:26366 CAPLUS
DN 132:222723
TI A New Procedure for the Preparation of β-Keto-δ-lactones from Sugars and Their Transformation into Glycosyl Acceptors in Disaccharides Synthesis
AU Bartolozzi, Alessandra; Capozzi, Giuseppe; Menichetti, Stefano; Nativi, Cristina
CS Centro CNR Chimica dei Composti Eterociclici Dipartimento di Chimica Organica, Universita' di Firenze, Florence, I-50121, Italy
SO Organic Letters (2000), 2(3), 251-253
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
AB Glycals are effective starting materials for the synthesis of enantiopure β-ketone-δ-lactones. They are easily transformed, through a two-step, one-pot reaction, into the corresponding α,α'-dioxothiones which in turn can be quant. trapped with dienophiles in inverse electron-demand [4+2] cycloaddns. The reaction of dioxothione

with endo and exo glucals allowed the elaboration of a new protocol to prepare 2-thio- or 2-deoxydisaccharides stereoselectively.
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 40 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:687410 CAPLUS
DN 132:75303
TI Knowledge-based design of bimodular and trimodular polyketide synthases based on domain and module swaps: a route to simple statin analogues
AU Ranganathan, Anand; Timoney, Maire; Bycroft, Matthew; Cortes, Jesus; Thomas, Iain P.; Wilkinson, Barrie; Kellenberger, Laurenz; Hanefeld, Ulf; Galloway, Ian S.; Staunton, James; Leadlay, Peter F.
CS Cambridge Centre for Molecular Recognition and Department of Biochemistry, University of Cambridge, Cambridge, CB2 1GA, UK
SO Chemistry & Biology (1999), 6(10), 731-741
CODEN: CBOLE2; ISSN: 1074-5521
PB Current Biology Publications
DT Journal
LA English
AB Background: Polyketides are structurally diverse natural products that have a range of medically useful activities. Nonarom. bacterial polyketides are synthesized on modular polyketide synthase (PKS) multienzymes, in which each cycle of chain extension requires a different "module" of enzymic activities. Attempts to design and construct modular PKSs that synthesize specified novel polyketides provide a particularly stringent test of our understanding of PKS structure and function. Results: We have constructed bimodular and trimodular PKSs based on DEBS1-TE, a derivative of the erythromycin PKS that contains only modules 1 and 2 and a thioesterase (TE), by substituting multiple domains with appropriate counterparts derived from the rapamycin PKS. Hybrid PKSs were obtained that synthesized the predicted target triketide lactones, which are simple analogs of cholesterol-lowering statins. In constructing intermodular fusions, whether between modules in the same or in different proteins, it was found advantageous to preserve intact the acyl carrier protein-ketosynthase (ACP-KS) didomain that spans the junction between successive modules. Conclusions: Relatively simple considerations govern the construction of functional hybrid PKSs. Fusion sites should be chosen either in the surface-accessible linker regions between enzymic domains, as previously revealed, or just inside the conserved margins of domains. The interaction of an ACP domain with the adjacent KS domain, whether on the same polyketide or not, is of particular importance, both through conservation of appropriate protein-protein interactions, and through optimizing mol. recognition of the altered polyketide chain in the key transfer of the acyl chain from the ACP of one module to the KS of the downstream module.
RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 41 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:422878 CAPLUS
DN 131:272022
TI Postulated Biogenesis of WS9885B and Progress toward an Enantioselective Synthesis
AU Vanderwal, Christopher D.; Vosburg, David A.; Weiler, Sven; Sorensen, Erik J.
CS Skaggs Institute for Chemical Biology and Department of Chemistry, The Scripps Research Institute, La Jolla, CA, 92037, USA
SO Organic Letters (1999), 1(4), 645-648
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal

LA English
OS CASREACT 131:272022
AB WS9885B promotes the assembly of microtubules in vitro and displays cytotoxicity as potent as paclitaxel against several cancer cell lines. A biogenesis for this architecturally complex bacterial metabolite from a much simpler, polyunsatd. precursor is proposed. An advanced intermediate for this polyunsatd. precursor was prepared stereoselectively. The synthesis features a chemoselective palladium-catalyzed cross-coupling of two advanced building blocks and an uncommon Claisen-like cyclization.
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 42 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:257754 CAPLUS
DN 131:70342
TI Dissecting and exploiting intermodular communication in polyketide synthases
AU Gokhale, Rajesh S.; Tsuji, Stuart Y.; Cane, David E.; Khosla, Chaitan
CS Department of Chemical Engineering, Stanford University, Stanford, CA, 94305-5025, USA
SO Science (Washington, D. C.) (1999), 284(5413), 482-485
CODEN: SCIEAS; ISSN: 0036-8075
PB American Association for the Advancement of Science
DT Journal
LA English
AB Modular polyketide synthases catalyze the biosynthesis of medicinally important natural products through an assembly-line mechanism. Although these megasynthases display very precise overall selectivity, we show that their constituent modules are remarkably tolerant toward diverse incoming acyl chains. By appropriate engineering of linkers, which exist within and between polypeptides, it is possible to exploit this tolerance to facilitate the transfer of biosynthetic intermediates between unnaturally linked modules. This protein engineering strategy also provides insights into the evolution of modular polyketide synthases.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 43 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:728571 CAPLUS
DN 130:1169
TI Combinatorial polyketide libraries produced using a modular polyketide synthase gene cluster as scaffold
IN Khosla, Chaitan; Ashley, Gary; Fu, Hong; Kao, Camilla M.; McDaniel, Robert
PA Kosan Biosciences, Inc., USA; The Board of Regents of the Leland Stanford Junior University
SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 15

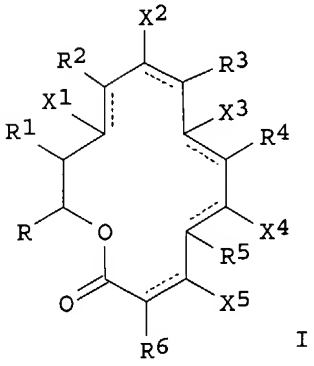
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9849315	A2	19981105	WO 1998-US8792	19980430
WO 9849315	A3	19990114		

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

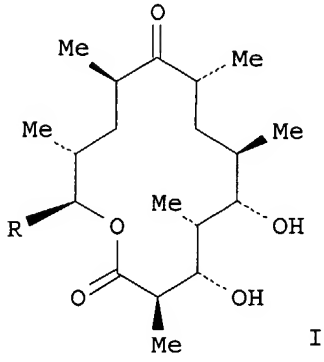
	US 2002034797	A1	20020321	US 1997-846247	19970430
	US 6391594	B2	20020521		
	AU 9871722	A1	19981124	AU 1998-71722	19980430
	AU 732909	B2	20010503		
	EP 979286	A2	20000216	EP 1998-918891	19980430
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001524829	T2	20011204	JP 1998-547413	19980430
	NZ 500693	A	20040130	NZ 1998-500693	19980430
	AU 769288	B2	20040122	AU 2001-57805	20010803
	US 2003138841	A1	20030724	US 2002-128795	20020422
PRAI	US 1997-846247	A	19970430		
	US 1998-76919P	P	19980305		
	US 1994-238811	A2	19940506		
	US 1995-486645	A1	19950607		
	AU 1998-71722	A3	19980430		
	WO 1998-US8792	W	19980430		
	US 1998-105987P	P	19981028		
	US 1999-429349	A1	19991028		

OS MARPAT 130:1169

GI



I



II

AB Combinatorial libraries of polyketides can be obtained by suitable manipulation of a host modular polyketide synthase (PKS) gene cluster such as that which encodes the PKS for erythromycin. The combinatorial library is useful as a source of pharmaceutically active compds. In addition, novel polyketides and antibiotics, e.g., I (R = straight chain, branched, cyclic, (un)saturated, (un)substituted hydrocarbyl C1-15; R1-R6 = H or (un)substituted C1-4 alkyl; X1-X5 = H2, HOH, or :O or X1-X4 = H only with double bond indicated by dotted line; with provisos) are prepared using this method. To prepare scaffolds for replacing 6-deoxyerythronolide B synthase (DEBS) acyltransferase (AT) and keto reductase (KR) domains, subclones for each of the 6 modules of DEBS were made containing restriction sites engineered at boundaries of the AT and reduction (KR or dehydratase/enoyl reductase/KR (DH/ER/KR)) domains. Cassettes for the rapamycin PKS were prepared for AT and reduction domains of the rapamycin PKS modules and used to replace DEMS modules in expression vectors transformed into Streptomyces coelicolor CH999. The transformant containing the rapDH/ER/KR1 cassette produced polyketide II (R = Me, Et).

L11 ANSWER 44 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:713395 CAPLUS

DN 130:110504

TI Asymmetric Syn-Selective Aldol Reactions of γ-Oxygenated Vinylogous Urethane with a Second Generation Chiral Auxiliary: Application in

10727225-2

Construction of (+)-3-Deoxy-D-manno-2-octulosonic Acid
AU Schlessinger, Richard H.; Pettus, Liping H.
CS Department of Chemistry, University of Rochester, Rochester, NY, 14627, USA
SO Journal of Organic Chemistry (1998), 63(24), 9089-9094
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
OS CASREACT 130:110504
AB Various examples of highly diastereoselective aldol reactions are presented where the nonracemic lithium enolate derived from a C4-oxygenated vinylogous urethane reacts in syn fashion to provide upon intramol. lactonization useful γ-alkoxy-δ-lactone synthons in prepn of (+)-KDO ammonium salt.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 45 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:610009 CAPLUS
DN 130:2034
TI New toxic metabolites from an Ascomycete, Emericella corrugata
AU Fujimoto, Haruhiro; Yamamoto, Kazumi; Arisawa, Mitsuhiro; Takahashi, Sachiko; Tanaka, Yukiko; Yamazaki, Mikio
CS Faculty Pharmaceutical Sciences, Chiba University, Image-ku Chiba, 263-8522, Japan
SO Maikotokishin (Tokyo) (1998), 46, 29-34
CODEN: MAIKD3; ISSN: 0285-1466
PB Maikotokishin Kenkyukai
DT Journal
LA English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A new metabolite named emecorrugatin A (I), which caused lethal paralysis in mice, and its analog named emecorrugatin B (II) were isolated from an Ascomycete, Emericella corrugata, together with two known toxic metabolites, sterigmatocystin (III) and norsolorinic acid (IV).
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 46 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:520211 CAPLUS
DN 129:136392
TI A synthesis of mycalamide B
AU Kocienski, Philip J.; Narquizian, Robert; Raubo, Piotr; Smith, Christopher; Boyle, F. Thomas
CS Department Chemistry, Glasgow University, Glasgow, G12 8QQ, UK
SO Synlett (1998), (8), 869-872
CODEN: SYNLES; ISSN: 0936-5214
PB Georg Thieme Verlag
DT Journal
LA English
AB Mycalamide B was synthesized from readily available lactate, isobutyrate, 4-chlorobutanal, and 4-chlorobutanoyl chloride. The trioxabicyclo[4.4.0]decane ring system was created by reaction of a methoxymethyl ether with a siloxyoxirane induced by P2O5.

L11 ANSWER 47 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:131505 CAPLUS
DN 128:254492
TI Alcohol Stereochemistry in Polyketide Backbones Is Controlled by the β-Ketoreductase Domains of Modular Polyketide Synthases
AU Kao, Camilla M.; McPherson, Michael; McDaniel, Robert N.; Fu, Hong; Cane, David E.; Khosla, Chaitan
CS Departments of Chemical Engineering and Chemistry and Biochemistry, Stanford University, Stanford, CA, 94305-5025, USA
SO Journal of the American Chemical Society (1998), 120(10), 2478-2479
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 128:254492
AB Modular polyketide synthases (PKSs) catalyze the biosynthesis of polyketide natural products, and their modular active site organization has stimulated interest in generating new mols. through the rational and combinatorial manipulation of PKS genes. The complex series of reactions catalyzed by these multifunctional enzymes poses fundamental questions regarding the mechanisms by which substrate specificity and stereochem. are controlled in these multifunctional systems. Here, we report the construction of several ketoreductase (KR) domain replacements in a truncated derivative of the erythromycin PKS. Anal. of these mutants reveals that β-hydroxyl stereochem. in a growing polyketide backbone is exclusively controlled by the KR domains. These expts. provide the first direct insights into the structural basis for controlling the stereochem. of many of the asym. carbon centers in complex polyketide natural products.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 48 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:66007 CAPLUS
DN 128:139812
TI Manufacture of substituted erythromycins with transgenic Saccharopolyspora using a carboxylic acid-containing medium
IN Leadlay, Peter Francis; Staunton, James; Cortes, Jesus; Pacey, Michael Stephen
PA Biotica Technology Ltd., UK; Pfizer Inc.
SO PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9801571	A2	19980115	WO 1997-GB1810	19970704
	WO 9801571	A3	19980219		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2259420	AA	19980115	CA 1997-2259420	19970704
	CA 2259463	AA	19980115	CA 1997-2259463	19970704
	AU 9734509	A1	19980202	AU 1997-34509	19970704
	AU 731301	B2	20010329		
	EP 909327	A2	19990421	EP 1997-930626	19970704

	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	GB 2331518	A1	19990526	GB 1999-156	19970704
	GB 2331518	B2	20010314		
	CN 1229438	A	19990922	CN 1997-197649	19970704
	BR 9710209	A	20000111	BR 1997-10209	19970704
	NZ 333861	A	20000825	NZ 1997-333861	19970704
	JP 2000516450	T2	20001212	JP 1998-504925	19970704
	AP 1029	A	20011211	AP 1999-1444	19970704
	W: GH, KE, LS, MW, SD, SZ, UG, ZW				
	EE 3976	B1	20030217	EE 1999-14	19970704
	WO 9854308	A2	19981203	WO 1998-GB1559	19980528
	WO 9854308	A3	19990408		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9876661	A1	19981230	AU 1998-76661	19980528
	EP 983348	A2	20000308	EP 1998-924463	19980528
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	NO 9900012	A	19990223	NO 1999-12	19990104
	KR 2000023579	A	20000425	KR 1999-700024	19990105
	US 6271255	B1	20010807	US 1999-214454	19990916
	US 2001016598	A1	20010823		
	US 2002004487	A1	20020110	US 2001-896357	20010629
	US 6437151	B2	20020820		
	US 2003104585	A1	20030605	US 2002-307595	20021202
PRAI	GB 1996-14189	A	19960705		
	US 1996-24188P	P	19960819		
	GB 1997-10962	A	19970528		
	WO 1997-GB1810	W	19970704		
	WO 1998-GB1559	W	19980528		
	US 1999-214454	A3	19990916		
	US 1999-424751	A1	19991129		

OS MARPAT 128:139812

AB Erythromycins, particularly with C-13 substituents (e.g. C3-C6 cycloalkyl or cycloalkenyl groups) are prepared by fermenting suitable organisms in the presence of R1CO2H. A preferred organism is Saccharopolyspora erythraea preferably containing an integrated plasmid carrying genes for enzymes of erythromycin biosynthesis (6-Deoxyerythronolide B synthases). In addition, the genes for the enzymes can be engineered by alteration of the individual functional modules, eg. by exchanging with modules from the avermectin polyketide synthase genes. Genes for a number of 6-deoxyerythronolide B synthase analogs with modules from avermectin or rapamycin polyketide synthases were constructed and introduced into S. erythraea. A number of novel erythromycin analogs were obtained from cultures of transgenic microorganisms.

L11 ANSWER 49 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:65985 CAPLUS
DN 128:150377
TI Polyketides and their synthesis in Streptomyces strains transformed with hybrid type I polyketide synthases
IN Leadlay, Peter Francis; Staunton, James; Cortes, Jesus
PA Biotica Technology Ltd., UK
SO PCT Int. Appl., 177 pp.
CODEN: PIXXD2

10727225-2

DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9801546	A2	19980115	WO 1997-GB1819	19970704
	WO 9801546	A3	19980409		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2259420	AA	19980115	CA 1997-2259420	19970704
	CA 2259463	AA	19980115	CA 1997-2259463	19970704
	AU 9734514	A1	19980202	AU 1997-34514	19970704
	AU 731654	B2	20010405		
	EP 910633	A2	19990428	EP 1997-930631	19970704
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	CN 1229438	A	19990922	CN 1997-197649	19970704
	JP 2000511063	T2	20000829	JP 1998-504933	19970704
	WO 9854308	A2	19981203	WO 1998-GB1559	19980528
	WO 9854308	A3	19990408		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9876661	A1	19981230	AU 1998-76661	19980528
	EP 983348	A2	20000308	EP 1998-924463	19980528
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	KR 2000023579	A	20000425	KR 1999-700024	19990105
	US 2002004487	A1	20020110	US 2001-896357	20010629
	US 6437151	B2	20020820		
	US 2003104585	A1	20030605	US 2002-307595	20021202
PRAI	GB 1996-14189	A	19960705		
	US 1996-24188P	P	19960819		
	GB 1997-10962	A	19970528		
	WO 1997-GB1819	W	19970704		
	WO 1998-GB1559	W	19980528		
	US 1999-214454	A3	19990916		
	US 1999-424751	A1	19991129		

AB A hybrid type I polyketide synthase (PKS) gene typically containing a starter module and a plurality of heterologous extender modules is used to synthesize novel polyketides. The gene modules are treated as building blocks that can be used to construct enzyme systems. This generally involves the cutting out and the assembly of modules and multi-module groupings. Novel to the prior art, it is found that it may be preferable to make cuts and joins actually within domains (i.e., the enzyme-coding portions) and close to their edges. The DNA is highly conserved between all modular PKS's, and this may aid in the construction of hybrids that can be transcribed. One or more segments of DNA encoding individual modules or domains within a natural type I PKS are used to replace the DNA encoding individual modules or domains of another natural type I PKS. The total number of extension modules assembled in the hybrid PKS is not fixed,

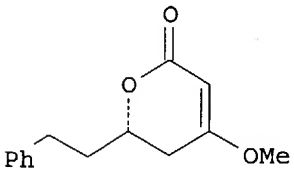
but the preferred number of such modules in any one multienzyme or cassette ranges between one, creating the smallest possible functional PKS, and six, which equals the largest number of consecutive modules found to date to be house in a single multienzyme of a natural type I PKS. Particularly suitable for these purposes are the components of type I PKSs for the biosynthesis of erythromycin, rapamycin, and avermectin, under the control of the actI promoter for the gene system for the biosynthesis of type II actinorhodin of Streptomyces coelicolor in an SCP2*-derived plasmid. The actII-orf4 gene is shown to activate the ActI promoter in transformed Saccharopolyspora erythreae, and does so more effectively than in its native host strain. The genetically engineered microorganisms produce non-natural analogs of the polyketide products of the natural acceptor PKS when cultured under suitable conditions. Erythromycin analogs (macrolide compds. with a 14-membered ring) are synthesized in with the C-13 substituent are groups of carboxylate units, especially isobutyrate and 2-methylbutyrate.

L11 ANSWER 50 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:283806 CAPLUS
DN 126:314085
TI Gain-of-Function Mutagenesis of a Modular Polyketide Synthase
AU McDaniel, Robert; Kao, Camilla M.; Fu, Hong; Hevezi, Peter; Gustafsson, Claes; Betlach, Mary; Ashley, Gary; Cane, David E.; Khosla, Chaitan
CS KOSAN Biosciences Inc., Burlingame, CA, 94010, USA
SO Journal of the American Chemical Society (1997), 119(18), 4309-4310
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB Modular polyketide synthases (PKSs) are multifunctional enzyme assemblies that catalyze the biosynthesis of numerous structurally complex natural products such as erythromycin, avermectin, and rapamycin. Active sites are clustered in "modules" that each perform a single cycle of condensation and β-ketoredn. in polyketide biosynthesis. Whereas the feasibility of loss-of-function mutagenesis of modular PKSs has been repeatedly demonstrated, gain-of-function mutagenesis of modular PKSs, until now, has not been realized. The latter is particularly challenging since, in addition to recognition of an unnatural substrate, the newly introduced activity must compete with chain transfer and/or release. Using a recently established screening system for the introduction of DH (dehydratase) activity into the reductive segment of module 2, the authors show that the reductive segment from module 4 of the rapamycin PKS can catalyze the formation of the expected dehydrated triketide intermediate. Furthermore, this enzyme-bound intermediate is faithfully processed by the next module of the erythromycin PKS with undiminished efficiency in vivo. In addition to expanding the potential of modular PKSs for combinatorial biosynthesis, the introduction of a functional dehydratase (DH) domain into module 2 of the complete erythromycin PKS could facilitate convenient access to the ketolides, a recently discovered class of erythromycin derivs. with broad spectrum antibacterial activity against a variety of clin. important susceptible and resistant organisms.

L11 ANSWER 51 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:191709 CAPLUS
DN 126:343784
TI Initial steps of the metal-catalyzed degradation of L-dehydroascorbic acid in acidic aqueous solutions
AU Jungbluth, Achim; Kolloch, Michael; Marx, Friedhelm; Pfeilsticker, Konrad
CS Institut Lebensmittelwissenschaft Lebensmittelchemie, Rheinische Friedrich-Wilhelms-Universitat, Bonn, D-53115, Germany
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung A: Food Research and Technology (1997), 204(3), 215-220

CODEN: ZLFAFA; ISSN: 1431-4630
PB Springer
DT Journal
LA English
AB The initial steps of the degradation of L-dehydroascorbic acid (L-DHA) in acidic aqueous solns. and the catalytic effect of different transition metal ions on this reaction were studied. The main product, 3,6-furanosido-2,3-hexodiulosonic acid 2-hydrate (I), was formed by lactone hydrolysis and hydration of the CO group in the C(2) position of L-dehydroascorbic acid. In addition, a number of other compds. were detected. They are formed from I by enolization, lactonization, hydration, and dehydration reactions as well as by cleavage and formation of cyclic hemiacetal bonds. The structures of these compds. were tentatively deduced by the mass spectra of their Me3Si derivs. A reaction scheme for their formation is proposed. Kinetics and reaction mechanism were strongly influenced by the presence of catalytic amts. of different transition metal ions. In acidic medium, the opening of the lactone ring of L-DHA is, to a certain degree, a reversible reaction.

L11 ANSWER 52 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:569768 CAPLUS
DN 125:328337
TI Enantioselective synthesis of (+)- and (-)-dihydrokawain
AU Spino, Claude; Mayes, Nigel; Desfosses, Helene; Sotheeswaran, Subramaniam
CS Dep. Chim., Univ. Sherbrooke, Sherbrooke, QC, J1K 2R1, Can.
SO Tetrahedron Letters (1996), 37(36), 6503-6506
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier
DT Journal
LA English
OS CASREACT 125:328337
GI



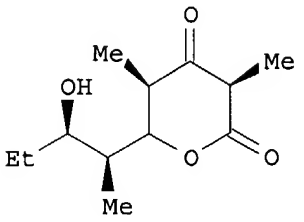
I

AB The first asym. synthesis of (+)-dihydrokawain and a formal synthesis of its unnatural enantiomer (-)-dihydrokawain was achieved in five steps from available starting materials via the catalytic hydrogenation of Me 5-phenyl-3-oxopentanoate with a chiral ruthenium catalyst. (+)-Dihydrokawain (I) is the natural product and is of S-configuration.

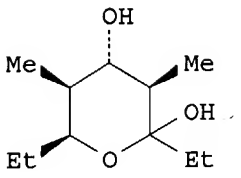
L11 ANSWER 53 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:544183 CAPLUS
DN 125:216623
TI Engineered biosynthesis of structurally diverse tetraketides by a trimodular polyketide synthase
AU Kao, Camilla M.; Luo, Guanglin; Katz, Leonard; Cane, David E.; Khosla, Chaitan
CS Department of Chemical Engineering, Stanford University, Stanford, CA, 94305-5025, USA
SO Journal of the American Chemical Society (1996), 118(38), 9184-9185
CODEN: JACSAT; ISSN: 0002-7863

10727225-2

PB American Chemical Society
DT Journal
LA English
GI



I



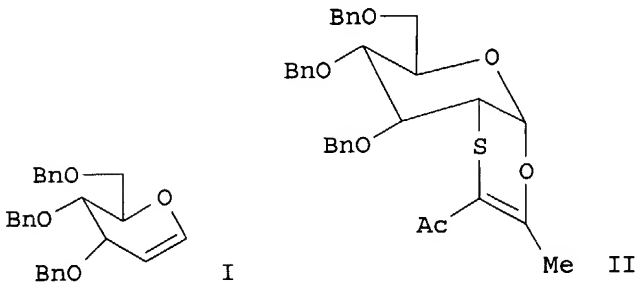
II

AB To better understand the relationship between structure and function in modular polyketide synthases (PKSs), a series of deletion mutants of the 6-deoxyerythronolide B synthase (DEBS) was constructed and analyzed. A trimodular mutant consisting of the complete DEBS1, containing modules 1 and 2, plus module 3 fused to the thioesterase domain of DEBS3 was constructed. This mutant produced 2 novel tetraketide metabolites, CK13a (I), a 6-membered ring lactone, and CK13b (II), a presumed derived decarboxylated hemiketal. These results illustrate how intermediates of the 6-deoxyerythronolide B pathway that do not undergo DEBS-catalyzed macrolactonization can cyclize into structurally diverse products. I and II present 2 addnl. structural scaffolds derived from truncated modular PKSs that could be combinatorially manipulated to generate mol. diversity in this medicinally important family of natural products.

L11 ANSWER 54 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:463863 CAPLUS
DN 125:161760
TI Erythromycin biosynthesis: exploiting the catalytic versatility of the modular polyketide synthase
AU Luo, Guanglin; Pieper, Rembert; Rosa, Angela; Khosla, Chaitan; Cane, David E.
CS Dep. of Chemistry, Brown Univ., Providence, RI, 02912, USA
SO Bioorganic & Medicinal Chemistry (1996), 4(7), 995-999
CODEN: BMECEP; ISSN: 0968-0896
PB Elsevier
DT Journal
LA English
OS CASREACT 125:161760

AB DEBS 1+TE is a recombinant modular polyketide synthase (PKS) in which the first two biosynthetic modules of the 6-deoxyerthronolide B synthase are linked to the thioesterase domain normally found at the C-terminus of DEBS 3. Incubation of DEBS 1+TE with propionyl-CoA, methylmalonyl-CoA, and NADPH gives the triketide lactone (2R,3S,4S,5R)-2,4-dimethyl-3,5-dihydroxy-n-heptanoic acid δ-lactone, the cyclized form of the normal triketide chain elongation product of DEBS 1. In order to probe the mol. recognition features of the PKS and to explore its synthetic versatility, [2,3-13C2]-(2S,3R)-2-methyl-3-hydroxypentanoyl-NAC thioester, an analog of the normal diketide chain elongation intermediate, and (2RS)-methylmalonyl-CoA were incubated with DEBS 1+TE, leading to the formation of the predicted labeled triketide ketolactone, as established by 13C NMR anal. and comparison with spectra of the authentic synthetic triketide ketolactone. This stereoselective conversion illustrates the potential of using modular PKSs as multifunctional catalysts for the enzymic synthesis of novel polyketides.

L11 ANSWER 55 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:260308 CAPLUS
DN 125:33968
TI The cycloaddition way to glycosyl transfer
AU Capozzi, Giuseppe; Dios, Angelos; Franck, Richard W.; Geer, Aloma; Marzabadi, Cecilia; Menichetti, Stefano; Nativi, Christina; Tamarez, Maria
CS Dep. Chemistry, Hunter College, New York, NY, 10021, USA
SO Angewandte Chemie, International Edition in English (1996), 35(7), 777-9
CODEN: ACIEAY; ISSN: 0570-0833
PB VCH
DT Journal
LA English
OS CASREACT 125:33968
GI

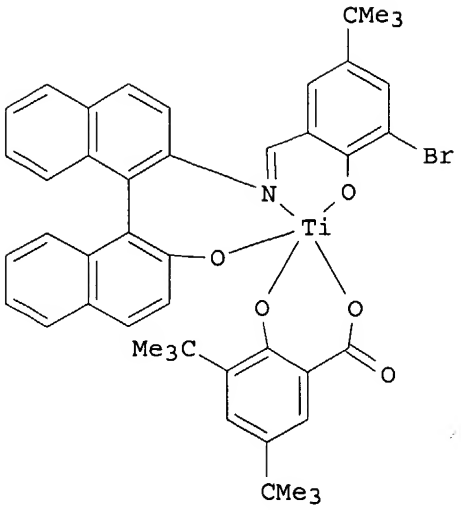


I II

AB Stereoselective cycloaddn. of diacylthiones, e.g. Ac2CS, to glycals, e.g. I, gave the corresponding glycosides, e.g. II, in good yields.

L11 ANSWER 56 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:950179 CAPLUS
DN 124:201597
TI Catalytic, Enantioselective Dienolate Additions to Aldehydes: Preparation of Optically Active Acetoacetate Aldol Adducts
AU Singer, Robert A.; Carreira, Erick M.
CS Arnold and Mabel Beckman Laboratory for Chemical Synthesis, California Institute of Technology, Pasadena, CA, 91125, USA
SO Journal of the American Chemical Society (1995), 117(49), 12360-1
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 124:201597
GI

10727225-2

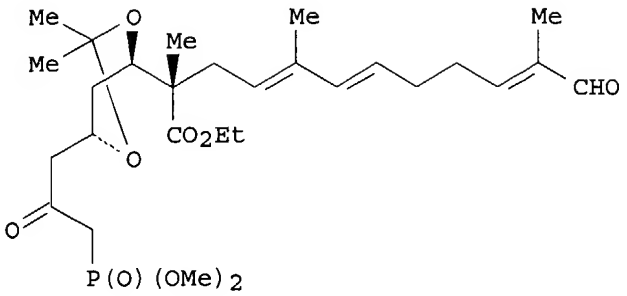


I

AB A new catalytic, enantioselective aldehyde addition process is described which employs readily available O-SiMe3 dienolates and 1-3 mol% of an optically active 2'-amino-1,1'-binaphthalene-2-ol containing Ti(IV) complex. For all of the aldehydes examined acetoacetate aldol adducts are obtained in useful levels of enantioselectivity (up to 94% ee) and yields. The reaction process expands the scope of catalytic, enantioselective aldol addition methods by providing access to versatile, optically active δ-hydroxy-β-keto-esters, -amides, and -lactones.

L11 ANSWER 57 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:517838 CAPLUS
DN 123:32815
TI Development of a synthesis of lankacidins: an investigation into 17-membered ring formation
AU Mata, Ernesto G.; Thomas, Eric J.
CS Dep. Chemistry, University Manchester, Manchester, M13 9PL, UK
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1995), (7), 785-99
CODEN: JCPRB4; ISSN: 0300-922X
PB Royal Society of Chemistry
DT Journal
LA English
GI

10727225-2



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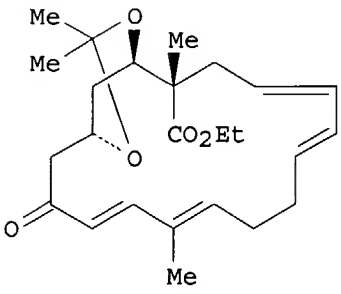
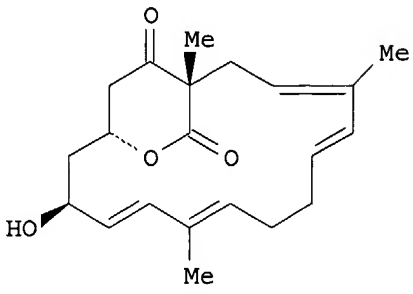


II



III

AB (Dimethoxyphosphinoyl)heptadecatrienal I was prepared and cyclized to give 17-membered carbocycle II, a macrocyclic precursor of the lankacidin analog III. Other 17-membered carbocycles were prepared

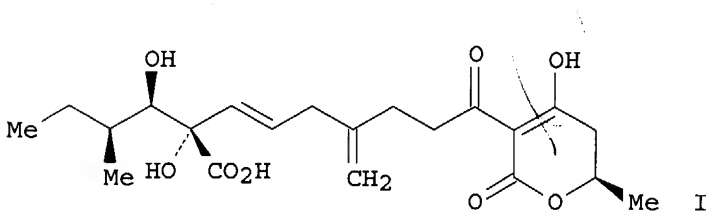
L11 ANSWER 58 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:396629 CAPLUS
DN 122:265115
TI Development of a synthesis of lankacidins: synthesis of the C(14)-C(6) fragment and introduction of the C(10)-C(13) diene
AU Roe, Jane M.; Thomas, Eric J.
CS Department of Chemistry, University of Manchester, Manchester, M13 9PL, UK
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1995), (4), 359-68
CODEN: JCPRB4; ISSN: 0300-922X
PB Royal Society of Chemistry
DT Journal
LA English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

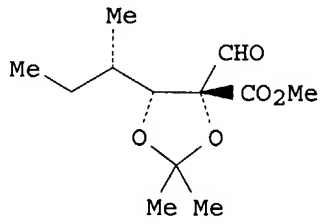
AB Acylation of the azetidinone I using the thioester II, prepared from di-Me (S)-malate, gave the (3S,4R)-3-(3',4'-bis-tert-butyldimethylsilyloxy-1'-oxobutyl)azetidinone III (R2 = SiMe2CMe3) which was converted into the N-acylazetidinone III (R2 = COEt). Desilylation of this was selective for the primary tert-butyldimethylsilyl groups and gave mixts. of products in which a 7-membered lactone was the major component rather than the 6-membered ring isomer required for a lackacidin synthesis. However, the (3S,4R)-3-(3'-tert-butyldimethylsilyloxy-2'-methyl-1'-oxohex-5-enyl)azetidinone IV (R1 = R2 = SiMe2CMe3) was similarly prepared and hydroxyl-induced azetidinone cleavage of the desilylated N-acyl derivative IV (R1 = H, R2 = COEt) gave the δ-lactone V. This lactone gave a complex mixture of products on attempted reduction of the ketone substituent, but the required hydroxy lactone VI could be obtained directly from the

azetidinone IV (R1 = H, R2 = COEt) using sodium borohydride in ethanol. Introduction of the C(10)-C(13) dienyl fragment into intermediates containing the δ-lactone was complicated by elimination. However, this diene could be introduced into azetidinone precursors of the δ-lactone using keto-phosphonate aldehyde condensations.

L11 ANSWER 59 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:31038 CAPLUS
DN 122:80948
TI Total Synthesis and Stereochemistry of Alternaric Acid
AU Tabuchi, Hiroyasu; Hamamoto, Taisuke; Miki, Shokyo; Tejima, Tsuyoshi; Ichihara, Akitami
CS Faculty of Agriculture, Hokkaido University, Sapporo, 060, Japan
SO Journal of Organic Chemistry (1994), 59(17), 4749-59
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 122:80948
GI



I



II

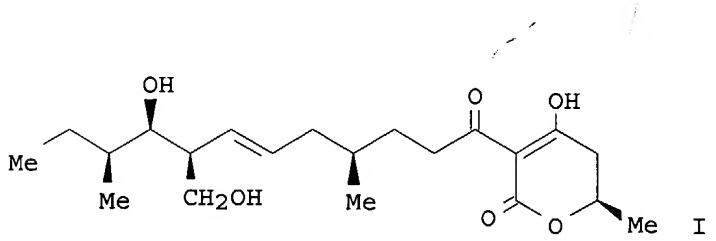
AB Determination of the stereochem. and the total synthesis of alternaric acid I has been achieved. The stereostructure of I has been elucidated by stereoselective synthesis of four diastereoisomers of the C(9)-C(14) fragment II, which had been obtained as a degradation product during structural studies. Key reactions of the total synthesis of I include the Julia olefination of tertiary aldehyde II and phenylsulfone PhSO2(CH2)2C(:CH2)(CH2)3OSiMe2CMe3 and novel one-pot construction of 3-acyl-4-hydroxy-5,6-dihydro-2-pyrone via Fries-type rearrangement of the O-enol acyl group of β-keto-δ-valerolactone toward the α-position of the δ-lactone. The absolute configuration of alternaric acid has been shown to be that illustrated in structure I. The modified Fries-type rearrangement method has also been extended to the synthesis of some other compds. containing a tricarbonylmethane structure.

L11 ANSWER 60 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:700721 CAPLUS
DN 121:300721
TI Use of 1,3-dioxin-4-ones and related compounds in synthesis. 45. 6-Methyl-3-benzylidene-5,6-dihydropyran-2,4-diones: synthesis and diastereoselectivity
AU Sato, Masayuki; Sunami, Satoshi; Kaneko, Chikara; Satoh, Shun-ichi; Furuya, Toshio

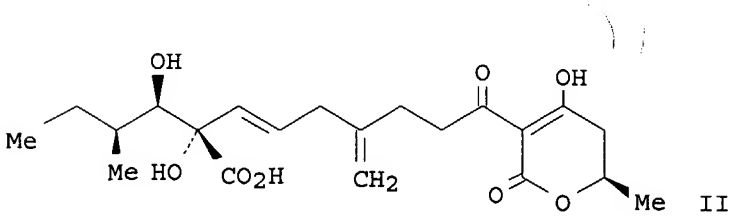
10727225-2

CS Pharmaceutical Institute, Tohoku Univ., Sendai, 980-77, Japan
SO Tetrahedron: Asymmetry (1994), 5(9), 1665-8
CODEN: TASYE3; ISSN: 0957-4166
DT Journal
LA English
AB (S)-6-methyl-(Z)-3-benzylidene-5,6-dihydropyran-2,4-diones have been synthesized from (S)-6-methyl-5,6-dihydropyran-2,4-dione through Knoevenagel condensation with an arylaldehyde followed by recrystn. from ether. The results of conjugate addns. and hetero Diels-Alder reactions of these compds. including an interpretation of the observed diastereoselectivities are described.

L11 ANSWER 61 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:696846 CAPLUS
DN 121:296846
TI Biosynthetic study of alternaric acid: isolation of plausible biosynthetic intermediates and origins of the hydrogen and oxygen atoms
AU Tabuchi, Hiroyasu; Oikawa, Hideaki; Ichihara, Akitami
CS Dept. Biosci. and Chem., Hokkaido Univ., Sapporo, 060, Japan
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1994), (19), 2833-9
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English
GI



I



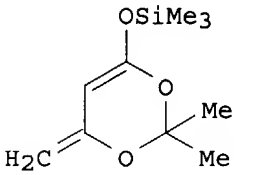
II

AB In further isolation studies of alternaric acid (I), new less-oxidized analogs, (10E)-10,11-dideoxy-10,11-dehydro-6,19-dihydroalternaric acid and 10,11-dideoxy-6,19-dihydroalternaric acid, were isolated from Alternaria solani, which is a causal fungus of early blight disease on potato and tomato. The structures were elucidated by spectroscopic anal. HPLC anal. of the acidic exts. of the culture filtrates which had been treated with specific cytochrome P 450 inhibitors were employed, and studies of the incorporation of labeled acetate into the metabolites were carried out. In addition, treatment of the fungus with cytochrome P 450 inhibitors resulted in the generation of a plausible precursor, termed proalternaric acid I (II). The structure and stereochem. of II were determined by spectroscopic anal. and chemical synthesis. From the results of these expts., plausible biosynthetic routes to I are postulated.

L11 ANSWER 62 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:655489 CAPLUS
DN 121:255489

10727225-2

TI Use of 1,3-dioxin-4-ones and related compounds in synthesis. XLIV. Asymmetric aldol reaction of 4-trimethylsiloxy-6-methylene-1,3-dioxines: use of tartaric acid-derived (acyloxy)borane complex as the catalyst
AU Sato, Masayuki; Sunami, Satoshi; Sugita, Yoshiaki; Kaneko, Chikara
CS Pharm. Inst., Tohoku Univ., Sendai, 980, Japan
SO Chemical & Pharmaceutical Bulletin (1994), 42(4), 839-45
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
OS CASREACT 121:255489
GI



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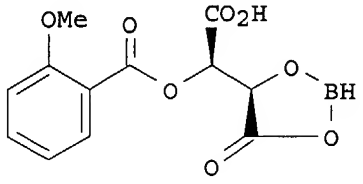

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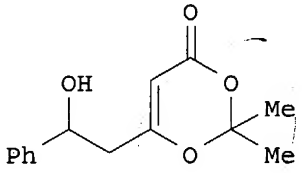


III

AB A novel enantioselective synthesis of 1,3-dioxin-4-ones having a 2-hydroxylated alkyl group at the 6-position has been accomplished by chiral tartaric acid-derived acylborane-mediated aldol condensation of the silyl enol ether derived from 6-methyl-derivs. of 1,3-dioxin-4-one with achiral aldehydes. Thus, aldol condensation of dioxinone I with PhCHO in the presence of borane complex II gave (+)-(hydroxyphenylethyl)dioxinone III.

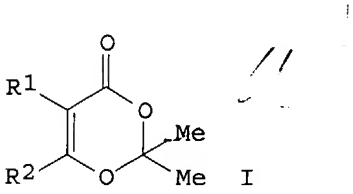
L11 ANSWER 63 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:483351 CAPLUS
DN 121:83351
TI Preparation of optically active hydroxyalkyl-2,2-dimethyl-1,3-dioxin-4-ones as pharmaceutical intermediates
IN Kaneko, Chikara; Sato, Masayuki
PA Chisso Corp., Japan
SO U.S., 14 pp. Cont.-in-part of U.S. 5,256,800.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5292891	A	19940308	US 1992-991551	19921215
	JP 04266885	A2	19920922	JP 1991-47285	19910221
	JP 3070772	B2	20000731		
	JP 04266879	A2	19920922	JP 1991-47286	19910221
	JP 3097143	B2	20001010		
	US 5256800	A	19931026	US 1992-836425	19920218
PRAI	JP 1991-47285	A	19910221		
	JP 1991-47286	A	19910221		

10727225-2

	US 1992-836425	A2	19920218
	US 1992-836426	B2	19920218

OS MARPAT 121:83351
GI



I

AB Title compds. [I; 1 of R1,R2 = H and the other = (CH2)nCH(OY)CH2X; X = H, Cl, N3, OCH2Ph; Y = H or Ac; n = 1-3] were prepared as intermediates for, inter alia, optically active 5,6-epoxyhexanoates. Thus, I (R1 = H, R2 = Me) was condensed with ClCH2COCl and the product enzymically reduced to give (-)-I [R1 = H, R2 = CH2CH(OH)CH2Cl] which was converted in 6 steps to (-)-Me 5,6-epoxyhexanoate.

L11 ANSWER 64 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:265414 CAPLUS
DN 120:265414
TI Structures and stereochemistries of new compounds related to alternaric acid
AU Tabuchi, Hiroyasu; Ichihara, Akitami
CS Fac. Agric., Hokkaido Univ., Sapporo, 060, Japan
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1994), (1), 125-33
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English
AB Three alternaric acid-related compds., viz., 10-deoxyalternaric acid , 10-deoxy-6,19-dihydro-alternaric acid , and 10-deoxy-6,8,9,19-tetrahydroalternaric acid , were isolated from Alternaria solani which is a causal fungus of early blight disease on potato and tomato. The structures and stereochemistries of these compds. have been determined by spectral studies and chemical correlations. The structure-activity relationships of alternaric acid 1 and plausible biosynthetic routes from these compds. to alternaric acid 1 are also discussed.

L11 ANSWER 65 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:106630 CAPLUS
DN 120:106630
TI Synthetic studies on bryostatins, antineoplastic metabolites: convergent synthesis of the C1-C16 fragment shared by all of the bryostatin family
AU Ohmori, Ken; Suzuki, Takayuki; Miyazawa, Kazuyuki; Nishiyama, Shigeru; Yamamaura, Shosuke
CS Fac. Sci. Technol., Keio Univ., Yokohama, 223, Japan
SO Tetrahedron Letters (1993), 34(31), 4981-4
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
GI

10727225-2

2,3,4-trihydroxyalkyl groups at the 6-position: versatile building blocks of polyhydroxylated 4-7 carbon backbones

AU Sugita, Yoshiaki; Sakaki, Junichi; Sato, Masayuki; Kaneko, Chikara

CS Pharm. Inst., Tohoku Univ., Senadi, 980, Japan

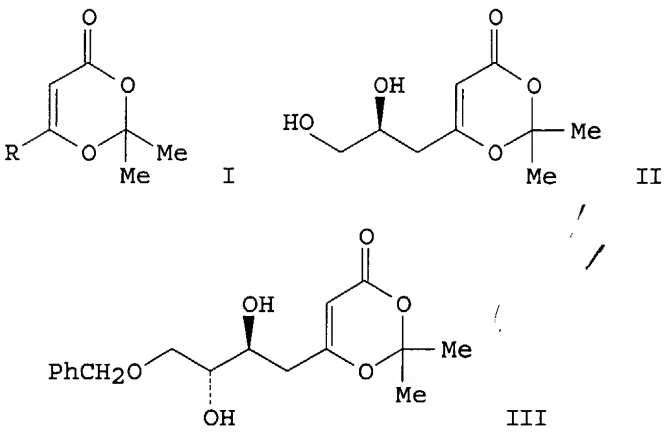
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1992), (21), 2855-61
CODEN: JCPRB4; ISSN: 0300-922X

DT Journal

LA English

OS CASREACT 118:101895

GI



AB 1,3-Dioxin-4-ones I [R = CH:CHCH2OH, CH2CH(OH)CH:CH2] having 3-hydroxyprop-1-enyl and 2-hydroxybut-3-enyl groups at the 6-position afford, after the Sharpless asym. epoxidn. followed by epoxide ring cleavage, the 6-[(2S)-2,3-dihydroxypropyl]- and 6-[2S,3R)-2,3,4-trihydroxybutyl)dioxinones II and III, resp. The former acts as a four- and six-carbon building block, while the latter as a five- and seven-carbon building block.

L11 ANSWER 69 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:101787 CAPLUS

DN 118:101787

TI Preparation of optically active 5,6-epoxyhexanoic acid esters as materials for physiologically active substances

IN Kaneko, Chikara; Sato, Masayuki

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF

DT Patent

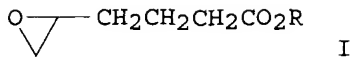
LA Japanese

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04266879	A2	19920922	JP 1991-47286	19910221
	JP 3097143	B2	20001010		
	US 5292891	A	19940308	US 1992-991551	19921215
PRAI	JP 1991-47285	A	19910221		
	JP 1991-47286	A	19910221		
	US 1992-836425	A2	19920218		
	US 1992-836426	B2	19920218		

OS CASREACT 118:101787

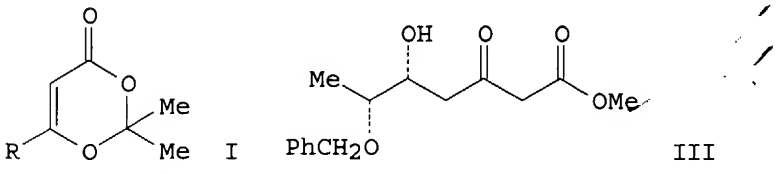
GI



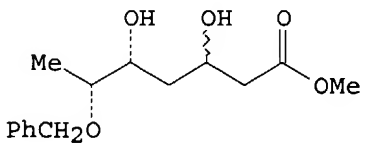
I

AB The title compds. I (R = Me, Et) are prepared by lactonization of optically active 2,2-dimethyl-6-(3-chloro-2-hydroxypropyl)-1,3-dioxin-4-one (II), hydrogenation of the obtained optically active 6-chloromethyltetrahydropyran-2,4-dione (III) in the presence of catalysts, dehydration of the obtained optically active 6-chloromethyl-4-hydroxytetrahydropyran-2-one (IV), hydrogenation of the obtained optically active 6-chloromethyldihydropyran-2-one (V) in the presence of catalysts, then treatment of the obtained 6-chloromethyltetrahydropyran-2-one (VI) in alcs. under basic conditions. Preparation of VI is claimed. III, IV, V, and VI are also claimed. A mixture of (-)-II and K2CO3 in MeOH was stirred at room temperature for 12 h to give 74% (-)-III, hydrogenation of which in Et acetate in the presence of PtO2 gave 73% (+)-IV (VII). Dehydration of VII gave 81% (-)-V, hydrogenation of which in Et acetate in the presence of Pd/C gave 96% (-)-VI, a mixture of which and K2CO3 in MeOH was stirred under ice cooling followed by at room temperature for 5 h to give 75% (-)-I (R = Me).

L11 ANSWER 70 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:22499 CAPLUS
DN 118:22499
TI 1,3-Dioxio-4-ones and related compounds in synthesis. Part 41. Aldol reaction of 4-trimethylsiloxy-6-methylene-1,3-dioxines with chiral aldehydes: enantioselective synthesis of 1,3-dioxin-4-ones having a 2,3-dihydroxylated alkyl group at the 6-position
AU Sato, Masayuki; Sugita, Yoshiaki; Abiko, Yumi; Kaneko, Chikara
CS Pharm. Inst., Tohoku Univ., Sendai, 980, Japan
SO Tetrahedron: Asymmetry (1992), 3(9), 1157-60
CODEN: TASYE3; ISSN: 0957-4166
DT Journal
LA English
OS CASREACT 118:22499
GI



I III



IV

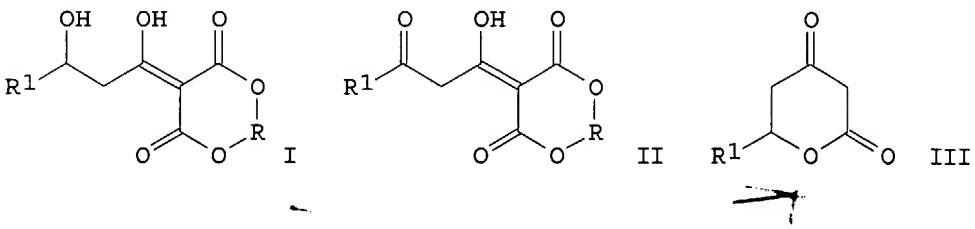
AB A novel enantioselective synthesis of 1,3-dioxin-4-ones having a 2,3-dihydroxylated alkyl group at the 6-position has been accomplished by titanium tetrachloride-mediated aldol condensation of silyl enol ethers derived from the 6-alkylated dioxinones with chiral 2-benzyloxypropanal. The keto group of the corresponding β-keto esters obtained after cleavage of the acetal function affords, by 1,3-syn and/or -anti reduction, 3,5,6-trihydroxyheptanoic acids in highly enantioselective manner. Thus,

dioxinone I (R = Me) was silylated and alkylated with (S)-2-benzyloxypropanal to give (S,S)-I [R = CH2CH(OH)CHMeOCH2Ph] in 75% overall yield. (R,R)-I [R = CH2CH(OH)CHMeOCH2Ph] (II) was also prepared similarly. II was silylated, hydrolyzed, and desilylated to give β-keto ester III which was stereoselectively reduced with NaBH4/Et2BOMe/THF/MeOH or Me4NHB(OAc)3/AcOH to give syn- or anti-diol IV, resp.

L11 ANSWER 71 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:549486 CAPLUS
DN 117:149486
TI Fermentative manufacture of optically active 1,3-dioxanes and preparation of optically active pyrans from them
IN Kaneko, Chikara; Sato, Masayuki
PA Chisso K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 04084893	A2	19920318	JP 1990-197775	19900727
PRAI JP 1990-197775		19900727		

OS MARPAT 117:149486
GI

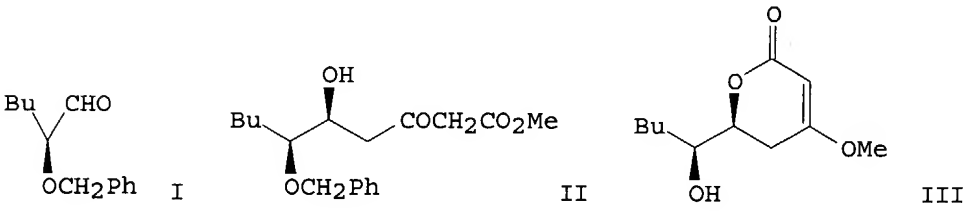


AB Optically active 1,3-dioxanes I (R = C2-20 alkyl- or alkylene-substituted CH2; R1 = C1-4 alkyl, alkenyl, haloalkyl) are manufactured by microbial stereospecific reduction of ketones II (R, R1 = same as above). Optically active pyrans III (R1 = same as above) are prepared by heating I (R, R1 = same as above) in organic solvents. 5-Acetoacetyl-2,2-dimethyl-1,3-dioxane-4,6-dione (2.28 g, preparation given) was incubated with bakers' yeast H2O at 32° for 12 h to manufacture 1.28 g (S)-5-(1,3-dihydroxybutylidene)-2,2-dimethyl-1,3-dioxane-4,6-dione (optical purity ≥99% e.e.). Refluxing 1.6 g of the product in MePh for 30 min gave 0.61 g (S)-6-methyl-5,6-dihydropyran-2,4-dione (optical purity ≥99% e.e.).

L11 ANSWER 72 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:408393 CAPLUS
DN 117:8393
TI Baker's yeast reduction of N-protected methyl 4-amino-3-oxobutanoates and 3-oxopentanoates
AU Hashiguchi, Shiohei; Kawada, Akira; Natsugari, Hideaki
CS Chem. Res. Lab., Takeda Chem. Ind., Ltd., Osaka, 532, Japan
SO Synthesis (1992), (4), 403-8
CODEN: SYNTBF; ISSN: 0039-7881
DT Journal
LA English
OS CASREACT 117:8393
AB Baker's yeast reduction of N-tert-butoxycarbonyl (Boc) or N-benzyloxycarbonyl (Cbz) protected Me 4-amino-3-oxopentanoates and 4-amino-3-oxobutanoates stereoselectively afforded the erythro-hydroxy esters erythro-

RNHCHMeCH(OH)CH2CO2Me (R = protecting group) and (R)-hydroxy esters, R-RNHCH2CH(OH)CH2CO2Me (same R). The resulting N-protected Me (R)-4-amino-3-hydroxybutanoate was converted into the biol. active substances, sperabillin C and (R)-GABOB [(R)-4-amino-3-hydroxybutanoic acid].

L11 ANSWER 73 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:407720 CAPLUS
DN 117:7720
TI High diastereoselection in the aldol reaction of the bis(trimethylsilyl enol ether) of methyl acetoacetate with 2-(benzyloxy)hexanal: synthesis of (-)-pestalotin
AU Hagiwara, Hisahiro; Kimura, Katsuhiko; Uda, Hisashi
CS Inst. Chem. React. Sci., Tohoku Univ., Sendai, 980, Japan
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1992), (6), 693-700
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English
OS CASREACT 117:7720
GI



AB Aldol condensation of CH2:C(OSiMe3)CH:C(OMe)OSiMe3 with 2-benzyloxyhexanal I affords highly selectively (99:1) the syn-aldol adduct II in the presence of titanium tetrachloride. The stereocontrolled synthesis of (-)-pestalotin (III) via (S)-(-)-II is reported.

L11 ANSWER 74 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:129402 CAPLUS
DN 116:129402
TI Pederin: the metalated dihydropyran approach. Stereoselective reduction of N-acylimidates via rhodium-catalyzed hydroboration
AU Kocienski, Philip; Jarowicki, Krzysztof; Marczak, Stanislaw
CS Dep. Chem., Univ. Southampton, Southampton, SO9 5NH, UK
SO Synthesis (1991), (12), 1191-200
CODEN: SYNTBF; ISSN: 0039-7881
DT Journal
LA English
OS CASREACT 116:129402
GI

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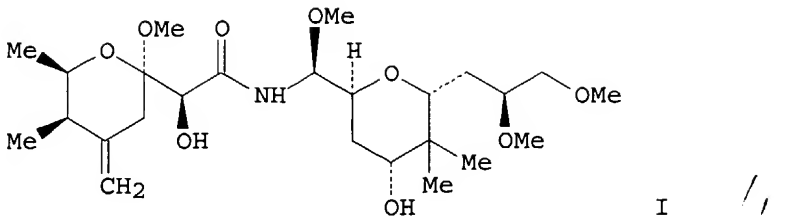

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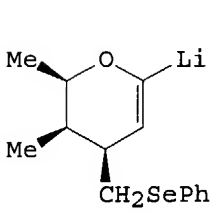
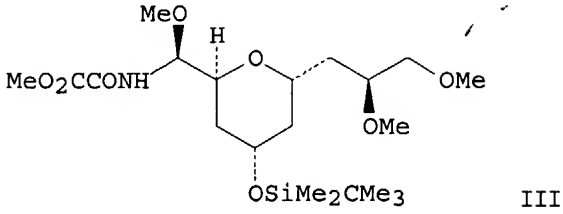


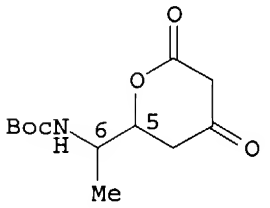
II



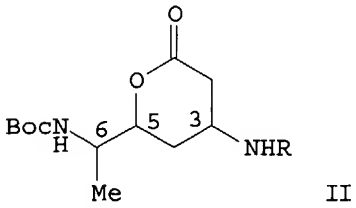
III

AB A synthesis of the insect toxin pederin (I) based upon the union of metalated dihydropyran II with the oxamate ester III is described. Noteworthy features include a new method for the construction of metalated dihydropyrans which tolerates heteroatom functionality and a Rh-catalyzed hydroboration reaction which enables stereocontrolled formation of the stereogenic center at C10.

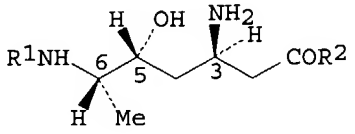
L11 ANSWER 75 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:21445 CAPLUS
DN 116:21445
TI Stereoselective synthesis of sperabillins and related compounds
AU Hashiguchi, Shohei; Kawada, Akira; Natsugari, Hideaki
CS Res. Dev. Div., Takeda Chem. Ind., Ltd., Osaka, 532, Japan
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1991), (10), 2435-44
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English
OS CASREACT 116:21445
GI



I



II

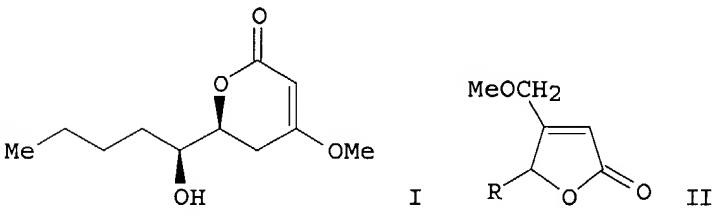


III

AB Baker's yeast reduction of (S)-BocNHCHMeCOCH2CO2Me (Boc = Me3CO2C) gave (3R,4S)-BocNHCHMeCH(OH)CH2CO2Me stereoselectively, which was converted into the erythro keto δ-lactone (5R,6S)-I in 3 steps. The threo keto δ-lactones (5R,6R)-I and (5S,6S)-I were prepared

stereoselectively by cyclocondensation of Boc-D-Ala-H and Boc-L-Ala-H with H2C:C(OSiMe3)CH:C(OMe)OSiMe3 in the presence of catalytic SnCl2. Reductive amination of lactones I gave 3,6-diamino anti-substituted lactones (3R,5R,6S)-, (3R,5R,6R)-, and (3S,5S,6S)-II (R = PhCH2O2C) stereoselectively. II were transformed into sperabillin and negamycin derivs., e.g. III [R1 = (E,E)-Me(CH:CH)2CO, R2 = CH2CH2CH(NH2):NH.2HCl; R1 = H, R2 = NMeCH2CO2H] from (3R,5R,6S)-II. The absolute configurations of sperabillin B and D were determined as (3R,5R,6R) by comparison of (3R,5R,6R)-II (R = Boc) with a degradation product of sperabillin B and by transformation of (3R,5R,6R)-II (R = PhCH2O2C) into sperabillin D.

L11 ANSWER 76 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:20815 CAPLUS
DN 116:20815
TI A stereoselective synthesis of (±)-pestalotin
AU Honda, Toshio; Okuyama, Akihiko; Hayakawa, Tomohisa; Kondoh, Hirotsune; Tsubuki, Masayoshi
CS Inst. Med. Chem., Hoshi Univ., Tokyo, 142, Japan
SO Chemical & Pharmaceutical Bulletin (1991), 39(7), 1866-8
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
GI



I

II

AB (±)-Pestalotin (I) was prepared employing a stereoselective reduction of alkyltetronate II (R = MeCH:CHCH2) to give II (R = Bu) and a 2-carbon elongation of (S*,S*)-BuCH(OCH2Ph)CH(OSiMe2CMe3)CH2COR (III; R = H) with N2CH2CO2Et to give III (R = CH2CO2Et) as key steps.

L11 ANSWER 77 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:655980 CAPLUS
DN 115:255980
TI Process for the preparation of oxetanones
IN Karpf, Martin; Zutter, Ulrich
PA Hoffmann-La Roche, F., A.-G., Switz.
SO Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

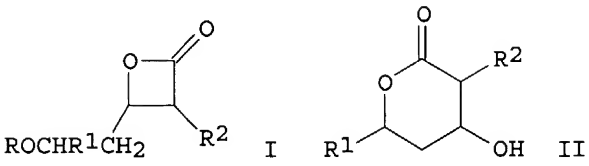
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 443449	A2	19910828	EP 1991-102150	19910215
	EP 443449	A3	19911204		
	EP 443449	B1	19970521		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	CA 2035972	AA	19910824	CA 1991-2035972	19910207
	US 5245056	A	19930914	US 1991-653846	19910211
	ZA 9101153	A	19911127	ZA 1991-1153	19910215
	AT 153332	E	19970615	AT 1991-102150	19910215
	ES 2103751	T3	19971001	ES 1991-102150	19910215

10727225-2

	AU 9171166	A1	19910829	AU 1991-71166	19910218
	AU 644846	B2	19931223		
	HU 56558	A2	19910930	HU 1991-559	19910220
	HU 208686	B	19931228		
	JP 04211675	A2	19920803	JP 1991-45629	19910220
	JP 2912463	B2	19990628		
	FI 9100857	A	19910824	FI 1991-857	19910222
	NO 9100712	A	19910826	NO 1991-712	19910222
	NO 178764	B	19960219		
	NO 178764	C	19960529		
	US 5399720	A	19950321	US 1993-77475	19930615
PRAI	CH 1990-589		19900223		
	CH 1990-3925		19901212		
	US 1991-653846		19910211		

OS MARPAT 115:255980

GI



AB Oxetanones I (R = H, aminoalkanoyl; R1, R2 = alkyl, oxaalkyl, alkylbenzyl, alkoxybenzyl) which are known inhibitors of pancreatic lipase, were prepared from the lactones II in 8 steps. Thus, (2RS,3RS,5SR)-II (R1 = undecyl, R2 = hexyl) was obtained from MeCOCH2CO2Me, Me(CH2)5Br, and Me(CH2)11CO2Me in 4 steps and was converted to (3S,4S,2'R)-I (R = H, R1 = undecyl, R2 = hexyl).

L11 ANSWER 78 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:536016 CAPLUS

DN 115:136016

TI Synthesis of 1,3-dioxin-4-ones and their use in synthesis. XXX. Lipase-catalyzed asymmetric synthesis of 6-(3-chloro-2-hydroxypropyl)-1,3-dioxin-4-ones and their conversion to chiral 5,6-epoxyhexanoates

AU Sakaki, Junichi; Sakoda, Hiroko; Sugita, Yoshiaki; Sato, Masayuki; Kaneko, Chikara

CS Pharm. Inst., Tohoku Univ., Sendai, 980, Japan

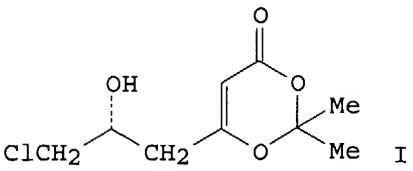
SO Tetrahedron: Asymmetry (1991), 2(5), 343-6
CODEN: TASYE3; ISSN: 0957-4166

DT Journal

LA English

OS CASREACT 115:136016

GI



AB Highly enantioselective syntheses of (R)- and (S)-(chlorohydroxypropyl)dioxinones, e.g., I and its enantiomer, by means of

lipase-catalyzed kinetic resolns. are described. Chiral dioxinones thus obtained have been converted to optically active 5,6-epoxyhexanoates, which are important precursors for a series of biol. active compds.

L11 ANSWER 79 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:206854 CAPLUS
DN 114:206854
TI Lankacidin synthesis: synthesis of the lactone fragment and an improved procedure for stereoselective acylation of a chiral β-lactam
AU Roe, Jane M.; Thomas, Eric J.
CS Dep. Chem., Univ. Manchester, Manchester, M13 9PL, UK
SO Synlett (1990), (12), 727-8
CODEN: SYNLES; ISSN: 0936-5214
DT Journal
LA English
OS CASREACT 114:206854
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB C(6)-C(14) and C(10)-C(13) fragments, I and II resp., of lankacidin C (III) were prepared using an improved procedure for β-lactam acylation. Stereoselective acylation is achieved by reaction of 2-pyridyl alkanethioates with the β-lactam in the presence of BuLi and Et2NH.

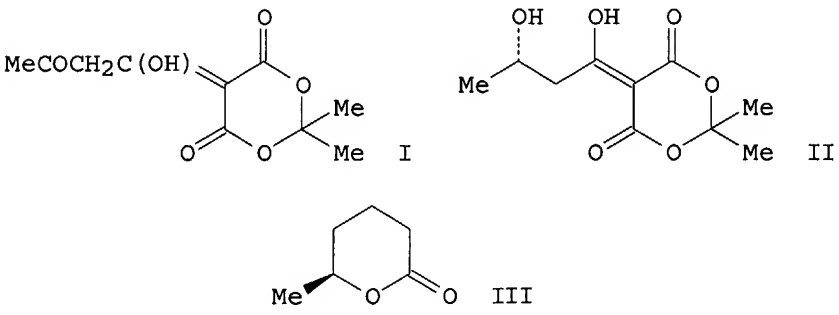
L11 ANSWER 80 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:123077 CAPLUS
DN 114:123077
TI Preparation of N-(2-guanylethyl)-δ-hydroxy-β-lysine amides (T-749) and analogs as antibiotics
IN Harada, Setsuo; Ono, Hideo; Masuya, Hirotomo; Natsugari, Hideaki
PA Takeda Chemical Industries, Ltd., Japan
SO U.S., 112 pp. Cont. of U.S. Ser. No. 868,739, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4906659	A	19900306	US 1987-129737	19871207
	JP 62258394	A2	19871110	JP 1986-143711	19860618
	JP 06039479	B4	19940525		
	JP 62277393	A2	19871202	JP 1986-293879	19861210
	JP 06099450	B4	19941207		
	JP 62228047	A2	19871006	JP 1986-311586	19861226
	JP 08016087	B4	19960221		
PRAI	JP 1985-133491		19850618		
	JP 1985-291055		19851223		
	JP 1985-289671		19851227		
	US 1986-868739		19860530		
	JP 1986-143711		19860618		
	JP 1986-293879		19861210		
	US 1986-941208		19861212		
	JP 1986-311586		19861226		
	JP 1985-281724		19851213		
	JP 1985-298671		19851227		

OS MARPAT 114:123077
AB R1CHR2CH(OR3)CH2CHR4CH2COR5 [R1, R4 = (un)substituted NH2; R2 = H, (un)substituted alkyl; R3 = H, protective group; R5 = (un)substituted OH,

NH2] were prepared by fermentation of Pseudomonas fluorescens and subsequent synthetic modification. Thus, the dihydrochloride of (R,R)-RNHCH2CH(OH)CH2CH(NHR6)CH2CONHCH2CH2C(:NH)NH2 [I; R = (2E,4Z)-MeCH:CHCH:CHCO, R6 = H] (fermentation preparation given) was hydrogenated over Pd/C and the product N- protected to give I.HCl [R = Bu(CH2)4CO, R6 = CO2CMe3] which was shaken 15 h at 37° with a cell suspension of P. acidovorance in pH 7 phosphate buffer to give I.2HCl (R = H, R6 = CO2CMe3). The latter was stirred 16 h with R7CO2H [R7 = (1E,3Z)-FCH2CH:CHCH:CH] in DMF containing DCC, hydroxybenzotriazole, and Et3N to give, after deprotection, I.2HCl (R = R7CO, R6 = H) which had ED50 of 4.42 mg/kg s.c. against Staphylococcus aureus 308A-1 in mice.

L11 ANSWER 81 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:122211 CAPLUS
DN 114:122211
TI Highly enantioselective reduction of acetoacetylated Meldrum's acid with fermenting baker's yeast
AU Sato, Masayuki; Sakaki, Junichi; Sugita, Yoshiaki; Nakano, Tsuyoshi; Kaneko, Chikara
CS Pharm. Inst., Tohoku Univ., Sendai, 980, Japan
SO Tetrahedron Letters (1990), 31(51), 7463-6
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 114:122211
GI



AB Acetoacetylated Meldrum's acid I was enantioselectively reduced with fermenting baker's yeast to afford the corresponding chiral (S)-alc. II, which could be easily converted to δ-lactone derivs., e.g., III.

L11 ANSWER 82 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:5205 CAPLUS
DN 114:5205
TI The role of L-ascorbic acid in the proline hydroxylation reaction
AU Yu, Rina; Kurata, Tadao; Arakawa, Nobuhiko
CS Dep. Food Nutr., Univ. Ulsan, Ulsan, S. Korea
SO Bitamin (1990), 64(2), 67-76
CODEN: BTMNA7; ISSN: 0006-386X
DT Journal
LA Japanese
AB For further clarification of the role of L-ascorbic acid (AsA) in the proline hydroxylation reaction, the specificity of AsA for the decarboxylation of α-ketoglutarate (KGA) was studied, using various reductants AsA and its structural analogs. Decarboxylation of KGA was not observed in the absence of AsA. Erythorbic acid (ErA) was as effective as

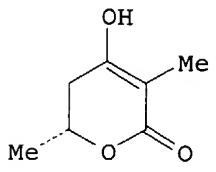
AsA and D-ascorbic acid was almost as effective as AsA in the reaction, whereas, thiol compds. showed a very slight accelerating effect on the decarboxylation of KGA. L-Scorbamic acid (SCA) or erythroscorbamic acid (ErS), at a concentration 10-folds greater than AsA showed a decarboxylation level of 40-45% that of AsA. Furthermore, in the presence of AsA, the pH-dependence and concentration effect on the decarboxylation of KGA were different from those in the presence of SCA. Moreover, the Lineweaver-Burk plot of the inhibition by SCA of AsA showed that the mode of interaction of SCA with AsA may be apparently noncompetitive. From these results, it is suggested that, due to its plane γ-lactone ring system with an endiol group, AsA is a specifically suitable reducing compound for the proline hydroxylation. AsA is considered to be most effective in its approaching and binding to the enzyme active site and reducing the enzyme bound Fe3+. The uncoupled reaction inevitably occurred during proline hydroxylation and this reaction was accompanied by the oxidation of AsA, thus leading to its consumption.

L11 ANSWER 83 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:531855 CAPLUS
DN 113:131855
TI Studies related to the synthesis of pederin. Part 2. Synthesis of pederol dibenzoate and benzoylpedamide
AU Willson, Timothy M.; Kocienski, Philip; Jarowicki, Krzysztof; Isaac, Kim; Hitchcock, Peter M.; Faller, Andrew; Campbell, Simon F.
CS Chem. Dep., Univ. Southampton, Southampton, SO9 5NH, UK
SO Tetrahedron (1990), 46(5), 1767-82
CODEN: TETRAB; ISSN: 0040-4020
DT Journal
LA English
OS CASREACT 113:131855
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The ring B fragments (+)-pederol dibenzoate (I) and (±)-benzoylpedamide (II) of the insect toxin pederin (III) were prepared An intramol. directed aldol condensation was used to construct the tetrahydropyran ring in I. Better stereocontrol in the synthesis of II was achieved in which the stereochem. at C-11 was introduced by a conjugate addition of Me3SiCN to the dihydropyranone IV. (±)-III was prepared from (±)-II and the ring A fragment (±)-benzoylselenopederic acid. The crystal structure of 18 epibenzoylpedamide is reported.

L11 ANSWER 84 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:7198 CAPLUS
DN 112:7198
TI A concise synthesis of (2S,5R)-2-methyl-5-hexanolide
AU Brandange, Svante; Leijonmarck, Hans; Oelund, Jonas
CS Arrhenius Lab., Univ. Stockholm, Stockholm, S-106 91, Swed.
SO Acta Chemica Scandinavica (1989), 43(2), 193-5
CODEN: ACHSE7; ISSN: 0904-213X
DT Journal
LA English
OS CASREACT 112:7198
GI



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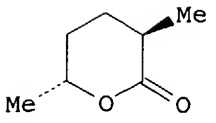


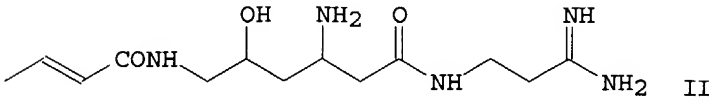
II

AB Enantiomerically pure (2S,5R)-2-methyl-5-hexanolide, carpenter bee pheromone or its enantiomer, has been synthesized in four steps from (R)-HOCHMeCH2CO2Me. The C-acylation of a lithium ester enolate with a β-lactone is part of a new route to β-keto-δ-lactones such as I. These can be efficiently reduced in two steps to the saturated δ-lactones such as II.

L11 ANSWER 85 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:439851 CAPLUS
DN 111:39851
TI Preparation and testing of bactericidal α-hydroxy-β-lysine derivatives
IN Masuya, Hiromoto; Harada, Setsuo; Natsugari, Hideaki
PA Takeda Chemical Industries, Ltd., Japan
SO Eur. Pat. Appl., 120 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 271829	A2	19880622	EP 1987-118314	19871210
	EP 271829	A3	19890726		
	EP 271829	B1	19930825		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 63277652	A2	19881115	JP 1987-306382	19871202
	AT 93513	E	19930915	AT 1987-118314	19871210
PRAI	JP 1986-294432		19861210		
	JP 1987-306382		19871202		
	EP 1987-118314		19871210		

OS MARPAT 111:39851
GI



II

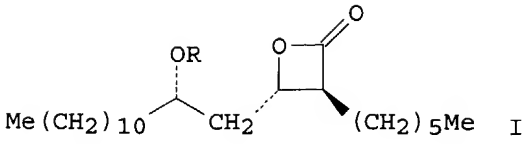
AB R1CHR2CH(OR3)CH2CHR4CH2COR5 [I; R1, R4 = (substituted) amino; R2 = H, (substituted) alkyl; R3 = H, protecting group; R5 = OH, amino, etc.] useful as antibacterials, were prepared H2NCH2CH(OH)CH2CH(NHBOC)CH2CONHCH2CH2C(:NH)NH2.2HCl (BOC = Me3CO2C) in DMF was acylated by crotonic acid in the presence of Et3N/DCC/hydroxybenzotriazole and the product was deprotected with CF3CO2H to give δ-hydroxy-β-lysine derivative II. Several II had MIC's of 100 μg/mL against Streptococcus aureus 308A-I andED50's in mice of 4.42-25 mg/kg s.c.

L11 ANSWER 86 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:450771 CAPLUS
DN 109:50771

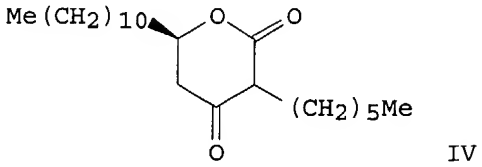
10727225-2

TI The role of ascorbic acid in proline hydroxylation. Part II. The role of L-ascorbic acid in the decarboxylation of α-ketoglutarate catalyzed by prolyl 4-hydroxylase
AU Yu, Rina; Kurata, Tadao; Arakawa, Nobuhiko
CS Dep. Food Nutr., Ochanomizu Univ., Tokyo, 112, Japan
SO Agricultural and Biological Chemistry (1988), 52(3), 721-8
CODEN: ABCHA6; ISSN: 0002-1369
DT Journal
LA English
AB For further clarification of the role of L-ascorbic acid (AsA) in the prolyl 4-hydroxylase reaction, the specificity of AsA for the decarboxylation of α-ketoglutarate (KGA) was studied using various reductants including AsA and its structural analogs. Decarboxylation of KGA was not observed in the absence of AsA. Erythorbic acid (ErA) was as effective as AsA, and D-ascorbic acid was almost as effective as AsA in the reaction. Thiol compds. showed a very slight accelerating effect on the decarboxylation of KGA. Both L-scorbamic acid (SCA) and erythroscorbamic acid (ErS), at a concentration 10-fold greater than AsA, showed a decarboxylation level of 40-45% that of AsA. Furthermore, in the presence of AsA, the pH-dependence and concentration effect on the decarboxylation of KGA were different from those in the presence of SCA. Moreover, the Lineweaver-Burk plot of the inhibition by SCA of AsA showed that the mode of interaction of SCA with AsA may be noncompetitive. From these results, it is suggested that, due to its planar ring system with an endiol group, AsA is a specifically suitable reducing compound for inducing the decarboxylation of KGA in the enzyme reaction.

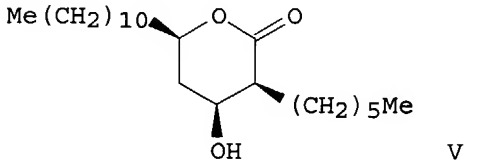
L11 ANSWER 87 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:132276 CAPLUS
DN 108:132276
TI Synthesis of tetrahydrolipstatin and tetrahydroesterastin, compounds with a β-lactone moiety. Stereoselective hydrogenation of a β-keto δ-lactone and conversion of the δ-lactone into a β-lactone
AU Barbier, Pierre; Schneider, Fernand
CS Pharm. Res. Dep., F. Hoffmann-La Roche and Co., Ltd., Basel, CH-4002, Switz.
SO Journal of Organic Chemistry (1988), 53(6), 1218-21
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 108:132276
GI



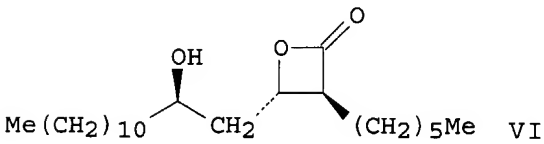
I



IV



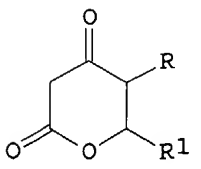
V



VI

AB Tetrahydrolipstatin (I, R = HCO-L-Leu) (II) and tetrahydroesterastin (I, R = Ac-L-Asn) (III) were prepared from (R)-Me(CH2)10CH(OCH2Ph)CH2CHO via β-keto δ-lactone IV. IV was hydrogenated stereoselectively to give hydroxy lactone V, which was converted into β-lactone VI. Esterification of VI with HCO-L-Leu-OH under Mitsunobu's conditions gave II. Esterification of VI with Ac-L-Asn-OH under the same conditions gave I (R = Ac-DL-Asn) via epimerization at the amino acid. Saponification of the latter gave I (R = H), which was condensed with Z-L-Asn-OH (Z = PhCH2O2C) by the mixed anhydride method to give I (R = Z-L-Asn). The latter was Z-deblocked and then acetylated with AcCl to give III.

L11 ANSWER 88 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:458617 CAPLUS
DN 107:58617
TI Novel synthesis of indan derivatives
AU Kashihara, Hiroshi; Shinoki, Hiroshi; Suemune, Hiroshi; Sakai, Kiyoshi
CS Fac. Pharm. Sci., Kyushu Univ., Fukuoka, 812, Japan
SO Chemical & Pharmaceutical Bulletin (1986), 34(11), 4527-32
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
OS CASREACT 107:58617
GI



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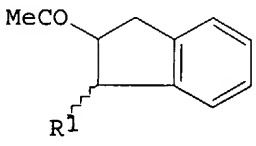
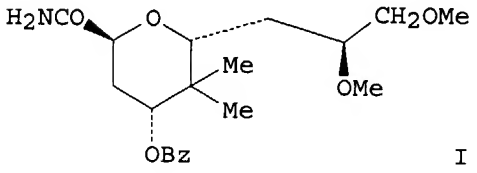


III

10727225-2

AB During the synthesis of biol. active compds. from pyrandiones I, a convenient procedure for the regioselective introduction of a double bond in Me alkyl ketones and a novel synthetic method for indan derivs. was developed. Thus aldol condensation of the dianion of RCH2COCH2CO2Me (R = PhCH2, 3-MeOC6H4CH2, 4-MeC6H4CH2, allyl, H2C:CMeCH2, Bu) with R1CHO (R1 = Me, Pr, heptyl, cyclohexyl, cyclooctyl, Ph) gave pyrandiones I in 21-96% yields. Refluxing I in AcOH in the presence of AcOK gave R1CH:CRCOMe (II) in 20-99% yields. Cyclization of II in 85% H3PO4 gave indans III in 34-50% yields.

L11 ANSWER 89 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1985:61983 CAPLUS
DN 102:61983
TI Synthetic approaches to pederin. A synthesis of (±)-benzoylpedamide
AU Kocienski, Philip; Willson, Timothy M.
CS Dep. Org. Chem., Univ. Leeds, Leeds, LS2 9JT, UK
SO Journal of the Chemical Society, Chemical Communications (1984), (15), 1011-12
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
GI



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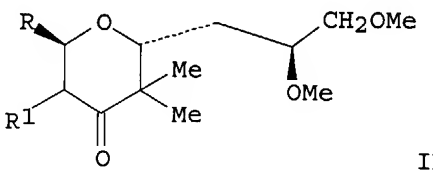

II

AB The title compound (I) was prepared in 9 steps from PhSiMe2OCMe:CMe2 and MeOCH2CH(OMe)CH2CHO. The key step was the BF3.Et2O-catalyzed addition of Me3SiCN to pyranone II (RR1 = bond) in CH2Cl2 at -78° followed by hydrolysis with aqueous HCl in THF to give II (R = CN, R1 = H) in 91% yield.

L11 ANSWER 90 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1976:164233 CAPLUS
DN 84:164233
TI Lankacidin group (T 2636) antibiotics. VI. Chemical structures of lankacidin group antibiotics. II
AU Harada, Setsuo
CS Med. Res. Lab., Takeda Chem. Ind., Ltd., Osaka, Japan
SO Chemical & Pharmaceutical Bulletin (1975), 23(10), 2201-10
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The structures of lankacyclinol A (I) and isolankacidinol (II), minor components from the culture filtrate of Streptomyces rochei, and the metabolite, lankacyclinol (III), were determined by chemical degradation and spectral anal. I and III were the decarboxylated derivs. of lankacidinol A and lankacidinol, resp. II was assumed to be the 16-epimer of lankacidinol.

10727225-2

AB During our efforts to synthesize the cytotoxic natural product FR182877 (I), we discovered intramol. reductive acylations that offer a stereocontrolled alternative to the classical Knoevenagel condensation for the formation of α-alkylidene β-keto-δ-lactones. Other progress toward a synthesis of FR182877 includes a π-allyl Stille coupling and a bromo Horner-Wadsworth-Emmons reaction that forms a 12-membered ring. Structural relationships among FR182877, hexacyclinic acid, macquarimicin A, and cochleamycin A are also discussed.
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 23 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:846514 CAPLUS
DN 136:262768
TI Biocatalytic reduction of β,δ-diketo esters: a highly stereoselective approach to all four stereoisomers of a chlorinated β,δ-dihydroxy hexanoate
AU Wolberg, Michael; Hummel, Werner; Muller, Michael
CS Institut fur Biotechnologie2 Forschungszentrum Julich GmbH, Julich, 52425, Germany
SO Chemistry--A European Journal (2001), 7(21), 4562-4571
CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB A stereoselective chemoenzymic synthesis of all four stereoisomers of tert-Bu 6-chloro-3,5-dihydroxyhexanoate (I) is presented. The key step of the sequence is a highly regio- and enantioselective single-site reduction of tert-Bu 6-chloro-3,5-dioxohexanoate by two enantiocomplementary biocatalysts. Alc. dehydrogenase from Lactobacillus brevis (recLBADH) afforded a 72% yield of enantiopure tert-Bu (S)-6-chloro-5-hydroxy-3-oxohexanoate [(S)-II]. The enantiomer (R)-II was prepared with 90-94% ee by Baker's yeast reduction in a biphasic system (50% yield). Both biotransformations were performed on a gram scale. The β-keto group of the enantiomeric δ-hydroxy-β-keto esters II thus obtained was reduced by syn- and anti-selective borohydride redns. Permutation of the reduction methods yielded all four stereoisomers of the crystalline target compound I (≥99.3% ee, dr≥205:1), which is a versatile 1,3-diol building block. RecLBADH accepts a variety of β,δ-diketo esters as was determined in a photometric assay. Tert-Bu 3,5-dioxohexanoate and tert-Bu 3,5-dioxoheptanoate were reduced on a preparative scale as well to afford the corresponding (R)-δ-hydroxy-β-keto esters with 99.4% ee and 98.1% ee, resp.
RE.CNT 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 24 OF 90 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:818362 CAPLUS
DN 136:183648
TI Stereoselective synthesis of polyketide fragments using a novel intramolecular Claisen-like condensation/reduction sequence
AU Hinterding, Klaus; Singhanat, Suradech; Oberer, Lukas
CS Novartis Pharma AG, Transplantation Research, Basel, CH-4002, Switz.
SO Tetrahedron Letters (2001), 42(48), 8463-8465
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 136:183648
GI